RESEARCH INSTITUTE NUMBER

JOURNAL of the AMERICAN OSTEOPATHIC ASSOCIATION

JULY, 1912

VOL. XI. No. 11.

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VOL. XI NEW YORK, N. Y., JULY, 1912 No. 11

Some Experiments with the Opsonic Index

C. A. WHITING, Sc. D., D. O., LOS ANGELES.

Paper read before the Research Institute Session of the A. O. A., Chicago, July, 1911

During the years 1909 and 1910, I made a series of careful experiments to determine whether or not it was possible to affect the opsonic index of an individual by mechanical manipulation. This series of experiments was made upon myself, the report forwarded to the Research Institute and was published in its first bulletin.

During the year 1910 and 1911 I made another series of experiments. Some of these were made upon a person known to be the victim of chronic tuberculosis; others were made upon persons supposed to be entirely free from tubercular taint. As this report may possibly be made the basis for other work, I present my results in tabulated form and give a brief description of my methods, so that every one may be in a position to judge of the value of the work.

In every case I used the leucocytes from my own blood. I obtained blood serum from the person who was to be experimented upon and determined the opsonizing power of this serum. The person was then placed on a table and the splanchic area of the back was highly stimulated. The subject was then placed on his back and direct and heavy stimulation was applied over the region of the liver. The whole process of stimulation occupied perhaps twenty minutes of time.

From half an hour to two hours after this stimulation, blood was again drawn from the patient and its serum separated from it. The test was of course made by comparing the opsonizing power of the serum obtained before the stimulation with the serum obtained after the stimulation.

The first person experimented on was Miss L., who is a victim of chronic tuberculosis. The experiments were made by taking her serum and then subjecting her to stimulation as already described and after the stimulation again taking blood from which the serum was obtained. The tabulated results were as follows:

DATE	From the influence of serum taken before stimulation.		From the influence of serum taken after stimulation.		Opsonic Index after stimulation compared with Index before stimulation.	Percentage of gain by stimulation.
	Leucocytes counted	Bacteria ingested	Leucocytes counted	Bacteria ingested		
			MISS L.			
Mch. 17	50	151	50	163	107.9	7.9
Mch. 24	80	334	80	407	121.8	21.8
April 7	85	257	85	283	110.1	10.1
April 14	75	312	75	354	113.4	13.4
April 21	50	116	50	132	113.7	13.7
Average.....						13.4
			MR. W.			
April 28	50	211	50	253	119.9	14.7
			MR. L.			
May 5	80	402	80	463	115.1	15.1
May 12	100	287	100	315	109.8	9.8
May 19	80	227	80	242	106.6	6.6
Average.....						10.5

The chief value, as I understand it, which centers around this work, lies in the fact that phagocytosis appears to be greatly increased by mechanical manipulation. It shows that in the cases reported upon the susceptibility of the individual to tubercular infection was greatly decreased by mechanical stimulation. If further experimentation shall show that this specific fact is a general truth, if it should be found that phagocytosis toward all bacteria is increased by mechanical stimulation, then we certainly have in mechanical stimulation a prophylactic measure which is much more valuable than prophylactic antitoxins have ever been supposed to be even by those who had most faith in them.

I suspect more strongly each year that our ultimate conclusion will be that it is not good practice to ever introduce into the human body any substance which is not a normal constitutent of the body and that whatever we do, either in the way of prophylaxis or in the way of treating disease, should be done in the way of aiding and stimulating nature, rather than in supplementing her efforts by outside and unnatural forces.

All of the work which has been done during the last few years which throws more light upon the human body, impresses us with the supreme importance of the normal structure of the body. To the educated biologist, normal function without normal structure is simply inconceivable. Not only must the structure of organs be normal, but organs must be in normal relationship to each other.

One cannot contemplate the results recorded here without the question arising as to how they have been produced. Several possible answers readily present themselves. It may be due to simply increasing blood pressure; it may be due to having increased the elimination from the body; it may be due to having caused more rapid oxidation.

Another question which I have not solved, but which is of great practical importance, is in regard to the length of time this increased opsonic index lasts.

It will readily be seen that if prophylactic use is to be made of physical manipulation, the physician should have some clear idea as to how frequently his tratment should be administered.

We are as yet wholly ignorant of the origin of the opsonins. It is not improbable that when we shall definitely know where they originate, we may by direct stimulation of the organ or organs producing them be able to increase them much more rapidly and more certainly than we now can, while we are working entirely in the dark.

In a report of this kind, there is little room for speculation, but I may, perhaps, be pardoned for suggesting, not the possibility but the strong probability, that the opsonic index is materially lowered both by bony lesions and by muscular contractions.

Records of forty-four cases treated in the clinic of the Pacific College of Osteopathy have been studied in this connection. Of these, the anterior interscapular spine was associated with the posterior lower dorsal and upper lumbar in thirty-seven cases. In one case the upper dorsal spine was decidedly posterior and the lumbar curve was exaggerated. In one other case the curves were fairly normal and the spinal lesions consisted chiefly of a lack of mobility throughout. Both of these cases were of fibroid phthisis, and the disease has been present for many years. These cases include pulmonary, laryngeal, hip and knee, omentum and kidney tuberculosis, tubercular lymphatics and arthritis. Pott's disease was not included.

The spinal outline characteristic of tuberculosis and of the pre-tubercular stages presents the following peculiarities: The cervical spine presents various abnormalities, usually lesions involving single vertebrae and associated with irregular muscular tensions. The upper thoracic spine is anterior, the ribs drooping and rather more freely movable than normal; the vertebral articulations are

less movable than normal; the tissues in the neighborhood of the upper two or three dorsal spines are abnormally sensitive and the muscles innervated from these segments are contracted irregularly when the disease involves the apices. The lower interscapular region is found sensitive and these muscles are contracted when the lower lobes of the lung are involved, and the location of these sensitive areas may be employed in the localization of the lung area infected.

In every case recorded in this clinic, lesions involving the area of the origin of the upper and middle splanchnic nerves have been found. The typical tuberculosis spine must include lesions of the lower dorsal area. Probably these lesions are predisposing factors in tuberculosis, partly because of the effects produced upon nutrition thereby, but doubtless the lack of the normal mobility of this part of the spine prevents the normal stimulation of the liver, thus the normal opsonic index is lost, and immunity broken. The treatment of tubercular cases should include careful attention to the splanchnic area, the maintenance of the normal mobility and structural relationship of the entire spinal column, and such stimulating movements to the ninth and tenth thoracic neighborhood as is indicated in each individual case.

Osteopathic physicians and investigators are the only scientists now working on bony lesions and muscular contractions as related to the etiology of disease. There is no lack of competent investigators who are working on the body serums and on the problems of bacteriology in general. Just now it seems to be our special business to investigate the effect of bony lesions and muscular contractions upon the body, not only in the somewhat superficial way in which it has been done in the past, but to study the effect of these conditions upon the metabolism and the blood- and lymph-forming organs of the body.

PACIFIC COLLEGE OF OSTEOPATHY.

Diet in Constipation and Nervous Indigestion

C. W. PROCTOR, PH. G., D. O., BUFFALO, N. Y.

Paper read before the Research Institute Session of the A. O. A., Chicago, July, 1911

In the investigations made by me on the questions of Diet, I have considered only the diet supplementary to the usual osteopathic treatment in cases suffering from constipation or nervous indigestion. I selected these conditions because they frequently are associated in the same individual and because they are so frequently met with in an osteopathic practice. The lesion has not been considered because there are others who are investigating that feature. In these investigations I have written to a number of my fellow physicians and have received valuable suggestions. Some of the responses indicated that the writers were enthusiastic advocates of all kinds of dietetic treatment, even of extreme theories, others indicated their belief that the question of diet was altogether unimportant. I believe from my experience and observation that in general the best results lie between these positions, viz: Mechanical adjustment supplemented by intelligent directions regarding diet.

The proper test of a system of treatment is, "Does it present a reasonable means to relieve the case in hand and does it succeed?" Osteopathy possesses the merit of both. There can be no doubt that a nerve, impaired by irritation or vascular changes, is inefficient and that tissue which lacks either proper blood supply or proper nerve force is below normal efficiency. Now the additional question presents itself, are there dietetic

principles which co-operate with mechanical adjustment in restoring strength to weakened tissue? Or food which will be more easily cared for by the weakened digestive apparatus and fluids, so that more energy may be used to recover a normal condition of activity? The answer seems to be unquestionable, both from the standpoint of reasonableness and results.

In constipation frequently there is a dryness of the stool and an insufficiency of secretion that can be readily overcome by the ingestion of more fluid in the diet, but this should be done at a time and in a quantity not to impair the action of the digestive ferments. It is also important to consider the habit of the patient. Many persons are so preoccupied with business affairs that they neglect to drink enough water. To simply advise more water meets with the same inattention that has been previously existing. A definite amount and time should be stated. I have gotten the best results by directing the patient to drink at least two glasses of water a half hour before breakfast, and one or two before each remaining meal of the day, and one before bedtime. This plan has been reported favorably by a large number of the profession. The use of hot water for the morning has been frequently recommended, but in most cases the cool water is preferrable, as it has a tonic effect on the stomach walls where there is not too great weakness to retain it and benefit by it.

I shall not cite in detail the cases from which I draw this conclusion, but it is as important in results as if it were a complicated chemical compound, administered to a stated number and in a stated quantity, etc. Reports from probably twenty cases gave marked improvement in a short time. In all these cases the osteopathic treatment was continued, the increased fluid simply co-operating by affecting the consistency of the stool. Similar results may be obtained by exclusive milk or butter-milk diet, the question of deciding between the two depending on the circumstances surrounding the case.

In a great many cases of advancing years there is a fermentation accompanying the constipation with the development of gas, occasioning discomfort and, together with the absorption of more or less toxic material, often leading to nervous complications. In such cases the milk diet, or a diet of milk and raw eggs, will be an advantage, because it is easily digested and largely absorbed in the upper part of the alimentary tract and leaves little to ferment in the lower bowel. A few enemas, thoroughly washing out the lower bowel and ridding it of the most of the offensive matter and a host of bacteria, will be useful. In such cases, meat of any kind is apt to increase the toxic effect as the products resulting from the bacterial decomposition of meat are poisonous when absorbed in the system to any great degree. The temporary discontinuance of a meat diet is, therefore, advisable when such fermentation is considerable. In some cases the patient cannot continue the milk and egg diet without some unfavorable results, since it leaves too little material for the lower bowel and hence the stimulus of the contents is lacking and peristalsis is not properly incited. This may be overcome by the use of coarse bread and by fruits. In recognizing these facts and selecting a diet to bring these different elements together, excellent results may be obtained.

There are many who advocate a peculiar and rather extreme character of diet as a cure for almost everything. This has led to ridicule of diet as a treatment until some osteopaths feel that it is a lowering of professional dignity to prescribe fruit, or bran bread, or nuts, to increase the peristalsis and modify the contents of the lower bowel for the better movement of its fecal contents. With the assurance that nothing can be substituted for free and effective nerve force and blood supply and recognizing that these are essential to permanent recovery, the

careful selection of a diet is not only right and expedient, but a fine recommendation for the osteopath. It should be considered not as a substitute for the proper adjustment and mechanical control, but should be adapted to the case in hand and changed as the needs from time to time require. For instance, in one case of constipation, nuts may be useful and agreeable, while in another they may so distress the patient that they would be a serious drawback to the progress of the case. Therefore we do not find any diet that may be prescribed for every case of constipation, hence I have never given adherence to fasting, or to any single prepared food, cooked or uncooked, while most of them have some qualities that are very advantageous under certain conditions. Fletcherism is good, but few will practice it, and if it were practiced it would be at great inconvenience.

At the beginning of my study on foods, a gentleman, very active in business affairs, came under my care. He was constipated, had excessive fermentation, indigestion, was nervous, afflicted with insomnia, and irregular heart action—skipping several beats each minute. His weight was below normal. The bowels were emptied by enemas given in a reclining position; the water was worked well up into the bowels by manipulation. The evening meal for the first day was omitted and a liberal allowance of hot water was prescribed instead; in the morning as much of a quart of hot water with the juice of half a lemon as he could take a half hour before a breakfast of raw eggs, milk and coarse bread, followed by juice of an orange. A noon meal consisted of one quart of milk, a raw egg, an ounce of raisins, six dates and a tablespoonful of nut meats. For the regular evening meal, to which he had been accustomed, there was at first little change. The amount of milk and other foods was varied from time to time and in three months the insomnia was entirely gone, the weight increased over twenty pounds, the heart was regular and the bowels normal. The osteopathic treatments were given at first every evening and later at less frequent intervals. The treatments were directed to correct a posterior dorsal condition.

This diet has served for several similar cases, and similar results, but some could not take the milk, especially cases where there was hyper acidity, and another diet was necessary.

L. A. Bumstead, D. O., Delaware, Ohio, made the following report, which is brief and concise, and I include it as he made it:

I always give instructions as to diet in cases of constipation. First, I make inquiries about personal idiosyncrasies on the part of the patient, as I have sometimes found that literally what is one man's food is another man's poison, and the same diet cannot be prescribed to all patients. After thoroughly examining the stomach and upper bowels by means of stomach tube and urinalysis, I direct the patient to take a diet suited to his case. In cases of simple, habitual constipation without any discoverable organic causes, I advise a glass of water containing the juice of half a lemon and a half teaspoonful salt to be taken fifteen or twenty minutes before breakfast. *For breakfast*, shredded wheat with cream and fruit, apple or prunes or an orange. Graham bread, made of whole wheat, and butter. *For dinner*, fish or meat, coarse vegetables, stewed fruit, graham bread and butter and any dessert other than pastry, no pies. *For supper*, cold meat, salad, fruit, graham bread and butter. If the patient has any particular dishes that he likes, and I do not consider them objectionable, I allow him to have them.

The basis of the diet is graham bread and fruit; also plenty of fat in the way of olive oil or butter. Fats seem to excite a free flow of bile, which is helpful. In obstinate cases, I give an enema of four ounces of olive oil twice a week, using a colon tube. This is a good thing to use in many cases, as the oil cleans off the coating of faeces from the intestinal wall. The oil is retained over night.

The patient is directed to drink a glass of water every hour during the day, and also advised to use plenty of lemonade.

Results from the above treatment with osteopathy are uniformly good. The above is a form of diet advised by Von Noorden of Vienna, who never uses drugs in the treatment of constipation. I have modified his directions to suit American life. Over there they eat four or five times a day.

Drs. Beeman and Matthews, of New York City, have a diet list of laxatives and mark on the list what is advised for each patient when the list is handed to the patient.

LAXATIVE DIETARY

Take only those indicated

Water,	English Walnuts,
Spinach,	Stewed Raisins,
Asparagus,	Shredded Wheat,
Tomatoes,	Oat Meal,
Butter,	Peaches,
Olive Oil,	Pears,
Cod-Liver Oil,	Acid Fruit Juices,
Figs,	Grape Juice,
Butter Milk,	Lemonade,
Prunes,	Fruit Soup,
Apple Sauce,	Carrots,
Raw Apples,	Corn,
Baked Apples,	Lettuce,
Boiled Onions,	Celery,
Boston Brown Bread,	Grapes,
Bran Gems,	Rhubarb,
Kumyss,	String Beans,
Almonds,	Honey (without comb).

A number of the profession use regular diet lists from standard text books, allowing the patient to select from a variety of each of the following kinds of foods: fish, meats, bread, vegetables, fruits and drinks. My experience has led to prefer a definite prescription for each meal, for a week at a time, and a list so simple that it is easy to follow.

Robert Ware Rogers, D. O., Bound Brook, N. J., reports the following diet list for constipation:

Begin the day by drinking two glasses of cold water, and, if possible, ten minutes' exercise. *Breakfast.* Malt breakfast food, mush, oatmeal, or cornmeal; fresh fruit, toast, cereal coffee. *Lunch.* Soup, vegetable or puree; spinach, sprouts, tomatoes, onions, squash or cress; brown bread, graham, rye or whole wheat bread with honey, marmalade or jelly; fresh fruit. *Dinner.* Meat, any kind except pork, veal or preserved or dried meats; potatoes, cooked any way except fried; vegetables, any kind; fruit, apple sauce or rhubarb sauce, prunes; dessert, any simple pudding. At bedtime, six figs and six Educator bran cookies. Large quantities of water between meals.

A number of reports recommend bread made of bran and flour in equal amounts. Figs, dates and prunes are used by a number.

The character of the food must depend on circumstances. Traveling men must depend upon the ordinary means of supply at restaurants. There are a few prepared foods that can be carried about readily. A raw wheat bread put up by Dr. Thomas or Educator biscuit are serviceable. A breakfast food composed of flax seed meal and wheat flake, known as Uncle Sam's breakfast food, is helpful, and there are probably others.

It is unnecessary to add that there are cases which have tried these various things without the osteopathic treatment and yet secured no results, and it is logical to expect that results obtained by diet alone will not be permanent, if there is a lesion which impairs the nerve force or limits the blood supply to the bowel tissue.

There are some cases reported where a milk diet without other treatment has secured this result. Such a case is reported by C. W. Young, D. O. The results in the case were highly satisfactory, but it is my experience, and that of almost all with whom I have corresponded, that the osteopathic treatment is of the utmost importance with the diet.

A question, too, has arisen concerning fasting. Upton Sinclair's book and other authorities advocate it very enthusiastically. Applying our test as to the *reasonableness* of long fasts as a means of cure to be used generally, as to hypnotism and to other forms of mental treatment, they do not seem to me to be applicable to any considerable number of cases. There is no question but that overworked organs derive benefit from rest, but the greater number of those who have constipation are not hearty eaters, and to deplete and already depleted system by depriving it of all nourishment for a long period does not appeal to my reason. But allowing for the fact that my reasoning may be faulty, I have known of one case at least where a long fast is believed to have hastened death

and two others where such great exhaustion resulted that weeks were required to nurse back strength and which did not result in a permanent cure of the original bowel trouble.

There is no doubt that certain cases will be benefited by abstinence from food for a length of time suited to the case, but considering the possibilities of harm, the fact that it is a trying experience for the patient and that the public sentiment is apt to be strongly against the treatment, I have not studied extensively along this line and will leave the field open to those who prefer it.

ELLICOTT SQUARE.

Animal Experimentation

Series VII-XII

[EDITOR'S NOTE.—*The following series of experiments are from Dr. J. Deason and his assistants in the laboratories of Physiology in the American School of Osteopathy at Kirksville. The financial support which the A. T. Still Research Institute was able to render, together with the fact that A. S. O. provided the buildings for housing the animals and for the experimental work and allowed Dr. Deason and the instructors time for doing this work, have made it possible for the facts brought out herein to be given to the profession and scientific world.*

While much of this work is technical, it all has a bearing on most practical facts and shows, as mentioned in the last issue of the Journal, that whatever new is demonstrated in physiology and anatomy but adds the details confirming the original conception of Dr. Still, along which lines such marvelous work has been done and upon which such a remarkable school of practice has been established.]

Series 7

Osteopathic Stimulation and Inhibition

H. L. COLLINS and CHAS. R. EITEL

NOTE—This work was suggested by Dr. Deason for the purpose of determining whether the so-called osteopathic stimulation and inhibition effects, as claimed by some physicians, could be demonstrated upon animals and also for the purpose of doing some control work on mammalian Series No. 2 done last year by Drs. Deason and Robb.

It has long been claimed by members of the profession that osteopathic manipulation, such as vigorous movements of one or more of the spinal segments either alone or with deep manipulation of muscles are stimulatory in nature, meaning that such changes as increase in heart beat, both rate and amplitude, increase in blood pressure, increase in body temperature, and, in fact, an increase in many or possibly all functional activities controlled by nerves from these segments, may be effected, and that its effects be directed to certain body organs. The theory claims also that by deep and well regulated pressure applied to the spine a diametrically opposite effect, or inhibition of the functions of those structures supplied by nerves from the segments pressed upon may be produced.

On the other hand, there are those physicians who claim that neither stimulation nor inhibition results from osteopathic treatment but that it is only a normalization. That is, if an osteopathic lesion of any type, bony or otherwise, exists which is responsible for perversion of function, the correction of this lesion will result in a normalization of the function. Thus, if the lesion has caused a decreased functional activity of a certain organ, this functional activity will be raised to or toward the normal after the lesion is adjusted: and if the functional activity is increased, by reason of the lesion, it will be reduced to normal upon

readjustment of the structural condition.

By the above definition we do not refer to the question of osteopathic inhibition (pressure) applied over areas of the body other than spinal regions. That pressure applied over certain nerve trunks and visceral structures will result in the reduction of pain and other functional disturbances has been demonstrated by clinical experiences of many osteopathic practitioners. Tasker, in his 1903 edition of "Principles," defines inhibition as follows:

> By the term inhibition, we do not attempt to convey any other meaning than that of pressure applied at some particular point on the surface of the body for the purpose of lessening the hyperactivity or hyperaesthesia of the immediate or some distant part of the body.
>
> The inhibition itself does, in some cases, remove what we choose to call a lesion, in other cases it may make the removal of a lesion possible, but in the majority of cases its effect is purely on the nerves, thereby acting on both the sensory and motor portion of the reflex arc, lessening muscular contraction and pain.

Concerning this definition, it has been found experimentally upon monkeys by Dr. Deason, the results of which are published in this issue that pressure when effective in the reduction of lesions tends to normalize or reduce functional disturbances. Aside from this, pressure and manipulation in the spinal region give the same result.

It seems that no great amount of research work has been done along this line. There was published in the August number of the JOURNAL OF THE A. O. A., 1907, a series of experiments by Pearl A. Bliss, D. O., which we mention here. The results of this series (experiments one to seven inclusive) seem to show a marked decrease in blood pressure from inhibition in the splanchnic region (we presume the mid or lower thoracic region is meant by the term "splanchnic region"). This we have found to be true, but we find further that any manipulation of this area whether of the so-called inhibitory or stimulatory type produces a similar effect. The results of this series seem to show further that the so-called osteopathic stimulatory manipulation applied to the upper thoracic region is followed by vaso constriction and, therefore, an increase in blood pressure; the effects on amplitude or rate of heart beat are not stated nor can we determine this from the cuts given. Our results confirm these experiments only in part: viz., that any kind of manipulations whether of the so-called stimulatory or inhibitory type, when applied to the lower dorsal produces a decrease in systemic blood pressure, and either manipulation or pressure applied to the upper thoracic region gives an increase in blood pressure. The effects on heart beat will be found below.

Doubtless every osteopathic physician from his own clinical experience has arrived at some conclusion concerning this question, and so we shall have nothing to say relative to the clinical side, but shall state the results of our findings from animal experimentation.

METHODS AND TECHNIQUE.—Considerable care was used in the selection of the animals for these experiments; dogs were used, because blood pressure and pulse tracings can be more readily determined, and the results from manipulation and pressure are more satisfactory on dogs than from smaller animals. No animal was used which was not in a healthy condition and normal. The reasons for the above precautions will be better understood when the reader is reminded of the fact that the average dog is frequently found suffering from some disease which may be traced to a spinal lesion (Series 1, 2 and 3). This fact has been many times corroborated by experimental work in the A. S. O. during the past year. It is a well-known fact that all animals do not exhibit the same normal functions when operated upon under anaesthesia. It is necessary, therefore, to experiment on several animals, and take the average results of those which seem to display the most normal

reactions under anaesthesia. The following results have been taken from an average of fifteen animals operated.

The animals were kept under complete and uniform ether anaesthesia during the operation. When working on the lower dorsal and lumbar tracheal cannula was used and the blood pressure and pulse tracings were taken from the carotid artery by the use of a carotid cannula, mercury manometer and revolving kymograph. In some instances respiration was recorded, taken from the side arm of a T tube, connected on the one hand to the tracheal cannula and on the other to a diaphragm tambour, and the tracing No. 4 which was recorded simultaneously with taking the blood pressure. When work on the lower cervical and upper dorsal was done, the anesthetic was given by an ether cone and the blood pressure was taken from the femoral artery instead of the carotid; the reason for this change being to place the apparatus so that it would be least interfered with.

A number of tracings was taken from each animal before the tests were applied to determine whether or not the animal was showing normal functional activities. Several minutes were allowed before and after each test for normalization. All results from animals whose tracings failed to show normal activities before any tests were applied were discarded. Great precaution was taken in these experiments, to disturb the animal as little as possible. For example, when flexion of the spine was produced in the upper dorsal the animal was placed on its side and with a fixed point in the upper dorsal as a fulcrum, the upper part of the spine was flexed backwards. In this way there would be no gravity effects to consider and the variation must therefore be produced by nerve stimulation alone. A few experiments were tried to determine the effect of gravity on blood pressure, for instance, a carotid cannula was used for blood pressure and the caudal end of the animal was raised until the animal was in a vertical position. There was a slight increase in blood pressure rarely exceeding 2 m.m. of mercury and this was transient, the blood pressure dropping immediately to normal when the caudal end of the animal was returned to the table.

It has been sufficiently demonstrated (Series 1 and 2) that the pressure results were not due to massage but to pressure stimulation alone, for although in cutaneous and deep muscular pressure stimulation, slight variations in blood pressure, heart rate and respiration were usually, though not always, produced, they returned to normal as soon as the stimulation was discontinued; while when in direct pressure stimulation of the spine the blood pressure remained increased for several minutes after the stimulation was removed.

RESULTS

Of the fifteen dogs used in these experiments, detailed reports will be given of seven. The results obtained from the other eight were similar to these.

No. I. Manipulation of the lower cervical region, caused an extreme variation in blood pressure, which possibly could have been due to some abnormal position or movement of the animal; since it was almost impossible to manipulate, and at the same time hold the rest of its body perfectly still. The results obtained on this animal were directly opposite to those obtained from all the others; this may be accounted for by assuming that it was abnormal in some way, since the results from all the others were so uniform. Seven tracings were taken; five, when pressure was applied, two when manipulation was used.

With Pressure: Tracing No. 1. A decrease in both rate and amplitude of heart beat, also a decrease in blood pressure, was obtained; Tracing No. 2, 3, 4, 5. A decrease in blood pressure resulted, while rate and amplitude of heart beat were not affected.

With Manipulation: Tracing No. 1. There was quite a variation in blood pressure, but while it varied, it also fell perceptibly. Rate and amplitude of heart beat were not affected; Tracing No. 2. Here there was a decrease in both blood pressure and amplitude of heart beat, the rate remaining the same.

No. II. In this animal the effects of manipulation, flexion and pressure in the lower cervical and upper dorsal regions were demonstrated. The effects on blood pressure principally were noted.

By Manipulation: Tracing No. 1 showed an increase of 9 m. m. of mercury in blood pressure; rate and amplitude of heart beat being unaffected; Tracing No. 2 gave an increase of 5 m. m. of mercury in blood pressure; rate and amplitude of heart beat being unaffected. In this case, however, the blood pressure returned almost at once to normal.

By Flexion: Tracing No. 1. Blood pressure was increased 12 m. m., rate and amplitude of heart beat were not affected. (Fig. No. 3.) The extreme variation in blood pressure, when flexion was first applied, (Fig. No. 1), was probably due to some defect in the arrangement of the apparatus, or to some movement of the animal, but when flexion was fully established, the animal was held perfectly still, and the blood pressure remained increased, as may be seen in the tracing. Tracing No. 2. In this case an increase of 4 m. m. in blood pressure resulted. Rate and amplitude of heart beat being unaffected.

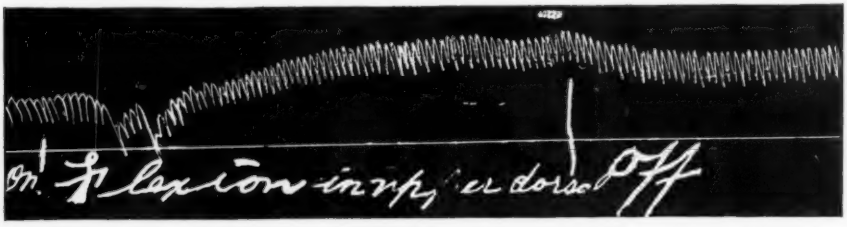


FIG. 1.—(Reduced one-half.)

By Pressure: In this instance an increase of 3 m. m. in blood pressure resulted. (Fig. No. 2.) Also 0.5 m. m. increase in amplitude of heart beat, rate remaining the same.

FIG. 2.—(Reduced two-thirds.)

No. III. Three records were made from this animal, the object being principally to demonstrate the results of osteopathic manipulation in the lower cervical and upper dorsal regions: Tracing No. 1. In this case the blood pressure was increased 3 to 5 m. m.; rate and amplitude of heart beat remaining constant. The blood pressure remained up some time after stimulation was removed; Tracing No. 2. Here the blood pressure was raised 3 m. m., and remained so; rate and amplitude of heart beat remaining constant; Tracing No. 3. Here the blood pressure raised 2 to 4 m. m., and remained up; rate and heart amplitude heart beat was unchanged.

No. IV. Two tracings taken from this animal were kept for reference. Tracing No. 1. (Fig. No. 3.) The following results were obtained: By pressure in the upper dorsal, produced by means of a block placed under that region, the blood pressure was first decreased for a few seconds and then increased 13 m. m., remaining thus for 2.5 minutes. It remained 5 m. m. above normal for 3 minutes, when the tracing was removed; Tracing No. 2. A decrease in blood pressure of 5 m. m. resulted, also an extreme variation in both rate and amplitude of heart beat. Stimulation was applied in the same manner as in No. 1; Tracing No. 3. By applying heavy pressure to the upper dorsal region, an increase of 10 m. m. in blood pressure resulted, remaining at this point for 3 minutes.

DOG No. V. Two methods were used on this animal, viz., osteopathic manipulation and the so-called osteopathic inhibition: Tracing No. 1. When osteopathic manipulation was applied to the lower cervical region, there resulted first a slight decrease and then an increase of 3 m. m. in blood pressure. The rate and amplitude of heart beat were also slightly increased; Tracing No. 2. When steady pressure was applied to this region, practically the same results were obtained, viz., first a perceptible decrease then an increase of 3 m. m. in blood pressure and a slight increase in rate and amplitude of heart beat. This was tried a second time with the same results, except the blood pressure raised only 2 m. m. The pressure (inhibition) was not applied evenly, therefor the tracing shows variations.

Osteopathic stimulation was also applied to the lower dorsal and upper lumbar regions. (Fig. 4.) This caused an increase in rate of respiration and heart beat. It also caused a decrease of 10 m. m. in blood pressure. This was followed by a marked decrease in rate of respiration; the rate of heart beat, however, continuing to increase. The blood pressure increased after stimulation was removed.

DOG No. VI. In this case the effects of man-

ipulation and pressure in the lower cervical region was demonstrated: Manipulation caused an increase in blood pressure of 5 m. m.; rate and amplitude of heart beat remaining unaffected. Pressure caused an increase in blood pressure of 2 m. m.; rate and amplitude of heart beat remaining constant.

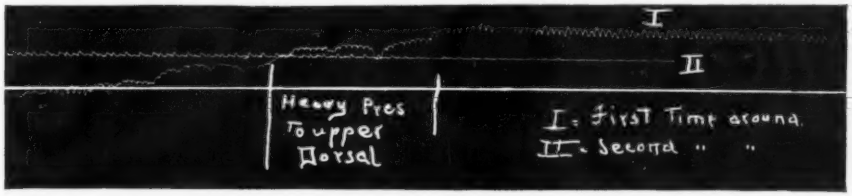


FIG. 3.—(Reduced one-half.)

DOG NO. VII. This dog was used to demonstrate the results of manipulation in the upper dorsal. In this instance the results were especially good, in that the blood pressure rose 3.5 m. m. and continued above normal for 2.5 minutes. When inhibition was applied to this region, a very marked decrease was obtained, but when two or more attempts were made to confirm this result, a slight increase instead was produced.

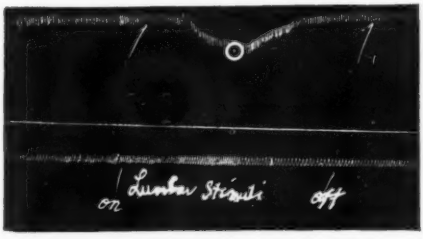


FIG. 4.—(Reduced one-half.)

SUMMARY AND CONCLUSIONS

The nature of this work is such that it has seemed advisable to state some of our general conclusions from the results of this series with a discussion of the various theories which have been given above. By this means we have avoided much repetition. This final statements of our results will therefore be given briefly and with little comment.

The above results relative to stimulation and inhibition have been reported in detail on seven of the animals for the purpose of showing the reason for the following conclusions:

1. That osteopathic manipulation to the mid or lower cervical and upper dorsal regions causes an increase in blood pressure and as a rule a slight increase in rate and amplitude of heart beat.

2. Osteopathic manipulation when applied to the mid and lower dorsal or lumbar regions produces a reduction of systemic blood pressure while the respiration and heart beat remain unaffected or are slightly increased.

3. We have not been able to demonstrate in this series of work that there is any essential difference between osteopathic stimulation and inhibition when applied to the same area of the spine.

4. That osteopathic manipulation or inhibition when applied to spinal regions and which does not effect a correction of any structural perversion is not always followed by specific effects.

5. That osteopathic manipulations when applied to various regions of the spine are neither specifically, stimulatory or inhibitory unless by such treatment a correction of some structural perversion is effected.

6. In most animals all kinds of manipulative treatment are to some extent stimulatory in nature, except pressure which is applied over nerve trunks or over the so-called "peripheral centers" for long periods of time. This may be explained by the law, "over-stimulation equals inhibition," but we question if this applies to manipulation of the spine.

7. That treatment of a certain spinal area in most cases is followed by physiological effects which depend upon the function of the nerve supply of structures innervated from these spinal segments; as, for example, the almost con-

stant increase in blood pressure obtained from manipulation of the lower cervical and upper thoracic region. It may be argued that the quite constant results obtained from certain so-called inhibitory treatments, such as that used in diarrhea, would tend to conflict with the results given above, but we would remind the reader that the function of the splanchnic nerves to the intestines is normally that of inhibition to the peristalsis, and therefore decreased peristalsis would result from stimulation rather than from inhibition.

No. 9

Some Immediate Effects of Dorsal Lesions on Visceral Reflexes*

L. G. ROBB, D. O., Asst. Instructor in Physiology, American School of Osteopathy.

While working on "movements of the alimentary canal" with the various classes that have gone through the Physiology Laboratory of the American School of Osteopathy during my connections with it, I noticed an occasional animal whose reflexes were diametrically opposite to what had been designated as normal—i. e., a reflex inhibition of peristalsis as a result of stimulation of a peripheral spinal nerve. In seeking an explanation of this I examined the spine and invariably found a lesion, or lesions, in the splanchnic region more likely at the seventh, eighth or ninth dorsal, although some were above and some below this.

These lesions[1] were generally in the form of rotations (an occasional scoliosis was found) and rather pronounced—i. e., were visible after removal of the skin and fascia and were easily reduced in the dead animal (a similar lesion is occasionally found in an animal that reacts "normal"). This offered a plausible explanation to me and in an endeavor to prove or disprove its relation to results obtained I undertook the following experiments:

PROBLEMS

1. May a spinal lesion affect the normal spino-sympathetic reflexes; if so, does it inhibit or accelerate the action of the region involved?

2. Is this action constant?

3. Is only one or are all functions of the involved nerves affected?

LITERATURE.—Unfortunately little or nothing can be found in the literature that has even an indirect bearing on this work. All laboratory men who have worked any number of animals know that occasionally one is found whose reflexes do not react in accordance with what they are trying to demonstrate, or in other words, do not follow the general physiological principles outlined in our standard texts. In some experiments this is a source of great annoyance and has been variously explained to students and others as a lack of technique, individual variations and idiosyncracies on the part of the animal's nervous system, the general physiological state of the animal, fatigue, or the inertia of the part involved. While any one of the above may and probably does have something to do with a certain class of cases, particularly the transitory, they, as vital force and similar phrases, are much abused and too frequently used to bridge over our ignorance of a very important subject. It has been my experience that if bony lesions are sought for in those animals in which erratic results are constant or predominate,[2] they may be found.

I have tabulated the physiological literature that might have a bearing on this

*I am greatly indebted to Dr. J. Deason for his encouragement, aid and valuable suggestions.

[1]It has been suggested that a similar lesion might be produced by the pre-anesthetic struggles of an animal, while these are occasionally rather violent. I know of no authentic case and, although not impossible, it is certainly not a frequent occurrence.

[2]It must not be forgotten that reference is here made to reflex efforts where the element of resistance to the impulse (partial block) may divert it to another path.

work in a previous article,[3] to which I will refer the reader, and shown in the same article that partial or complete blockage of the splanchnic nerves would allow a peripheral irritation ordinarily spent over the splanchnics to affect their opponent, the vagus, and in another article[4] (in association with Dr. Deason) how a slight resistance to the respiratory impulse in the phrenic nerve would cause it to cross in the hemisected cord and affect the nerve of the hemisected side.

METHODS.—Animals: Dogs, 14; cats, 1. Anesthetic: Ether, given by means of head mask, except in the first two or three cases, when the usual tracheal method was used. The mask was used because it lessened the exposure and trauma due to the operation. The anesthetic was in all cases constant and deep.

A window was made in the abdomen sufficiently large to observe the movement of the stomach. Care was taken to avoid undue exposure or chilling of the animal. The abdomen when opened was filled with warm normal NaCl solution 9 per cent. Nerves stimulated, sciatic and in some cases a cord of the brachial plexus. Occasionally at the end of the experiment the intact vagus and peripheral end of the sectional splanchnic were stimulated as a control.

Stimulation used: Medium strength faradic current for one minute. Blood pressure tracings when taken were from the brachial artery with the usual manometrical method. In animals that did not relax well the abdominal muscles were sectioned. All animals were controlled before lesioning.

LESIONS.—The animals in all cases were first normalized[5], then while the anesthesia was deep, traction was applied to the caudal part of the body with the cephalic end fixed, or vice versa, then the body flexed and rotated with the point of lesion fixed.

RESULTS.—It must be borne in mind that only the immediate[6] effects of the lesion are dealt with in this article.

In animals that reacted normally before lesioning, stimulation of a peripheral spinal nerve (generally the sciatic) after lesioning caused a peristalsis of the stomach appearing in some cases almost immediately, in others from forty to sixty seconds after application of the stimulus.

EXPERIMENT NO. 3 ON DOG

Anesthetic; ether by cone. 11.30, both sciatics ligated and sectioned; 11.33, cannula in brachial artery; 11.35, stomach exposed; 11.35.30, abdomen closed; 11.37, abdomen opened and filled with warm normal NaCl solution; 11.40, spontaneous peristalsis in stomach, movement increasing. Right sciatic stimulated, anesthesia light. Forced respiratory movements caused by stimulation forced the stomach out of abdomen.

11.40.15, stimulus removed; 11.43, left sciatic stimulated; 11.43.40, peristalsis stopped, stomach relaxed; 11.43.50, stimulus removed, 11.46, stomach relaxed, no peristalsis. Right sciatic stimulated; 11.46.50, stimulus removed; stomach more flaccid; 11.50, abdomen closed and sutured.

11.53, Rotation 6th, 7th, 8th dorsal; 11.53.10, abdomen opened; 11.54, left sciatic stimulated; insufficient anesthesia; 11.54.55, stimulus removed; 11.57, left sciatic stimulated; 11.57.50, stimulus removed; no effect; 11.59, right sciatic stimulated; 11.51.15, peristalsis started; 11.59.50, stimulus removed; 12.02, left sciatic stimulated; 12.02.40, peristalsis started (weak); 12.02.50, stimulus removed; 12.03.50, peristalsis stopped.

12.05, Right ant. crural ligated and sectioned; 12.08, right ant. crural stimulated; 12.08.45, peristalsis started; 12.10.20, stimulus removed; 12.11, peristalsis stopped.

EXPERIMENT NO. 5 ON DOG
MARCH 16, 1912

4.20, Etherized by cone; 4.25, sciatic exposed, ligated and sectioned; 4.26, abdomen opened; 4.30, right sciatic stimulated; 4.31, stimulus removed, stomach relaxed; 4.36, peristalsis in stomach for some time; right sciatic stimulat-

[3]Some Spino-sympathetic reflexes. A. O. A. JOURNAL. July, 1911.

[4]"On the pathway for the bulbar respiratory impulses in the spinal cord," Deason and Robb, *Am. Journal of Physiology*, Vol. 28, April 1, 1911, No. 1.

[5]This normalization constisted of testing out the reflexes to be studied.

[6]From time of production for the following 30 to 100 minutes.

ed; 4.37, stimulus removed; stomach relaxed; peristalsis stopped; 4.38, spontaneous peristalsis; 4.38.30, right sciatic stimulated; 4.39, stimulus removed; no change in stomach.

4.40, Rotation lower dorsal region; 4.45, right sciatic stimulated; peristalsis started; 4.46, stimulus removed; peristalsis stopped upon removal of stimulus; 4.50, left sciatic stimulated; 4.50.30, peristalsis in stomach; right sciatic stimulated; 4.52, stimulus removed;[7] no change; 4.53, peristalsis stopped.

4.55, Brachial plexus exposed, nerve ligated and sectioned; 4.57, nerve of brachial plexus stimulated; 4.57.15, peristalsis started; 4.58, stimulus removed; 4.59, peristalsis stopped.

Dog killed; rotation dorsal (5, 6, 7, 8, 9, 10.)

The duration of peristalsis after removal of stimulus was very inconstant, stopping in some cases almost immediately, in others continuing for several minutes with but little tendency to stop. In these cases, re-stimulation of a sensory (the same or other) nerve caused an increase in the force of the peristaltic wave.

In some animals the production of the lesion started a peristalsis which showed no tendency to stop and was increased by stimulation of the central end of the sciatic. Direct stimulation of the peripheral end of the cut splanchnic in these cases always inhibited peristalsis and in some cases initiated a reverse peristalsis which occasionally ceased with removal of the stimulus, but generally kept up for a varied length of time. In one instance, where peristalsis was already progressing, stimulation of the sciatic nerve broke the interval and immediately initiated a peristalsis of increased amplitude.

I will take the liberty of making reference here to the literature on anti-peristalsis,[8] which at best is very brief.

Lyle[9] states that anti-peristaltic waves occur under abnormal circumstances; i. e., intestinal strangulation, while[10] rarely in the presence of stricture of the pylorus, true anti-peristalsis of the stomach has been observed.

A center[11] for opening of the cardia has been located in the corp. striatum, the impulse reaching the stomach through the vagus, dilation centers are found in the upper portion of the spinal cord. The efferent nerves for these centers are the splanchnics and aortic plexus.

Reflex relaxation of the cardiac orifice can be induced by irritation of the sensory splanchnic fibers or the sciatic. A contraction of the pylorus accompanies dilation of the cardia, during vomiting the pylorus contracts and a wave passes up to the region of the cardia (Schaffer disputes this), and if long continued anti-peristalsis of the duodenum is noted. Irritation of the central end of the vagus is capable of inducing vomiting, central vomiting ceases after destruction of the corp. quadrigemina, division of the anterior column of the cord or destruction of the spinal sympathetics that pass to the stomach.

Venosity of the gastric blood as a result of capillary dilation may cause peristalsis. O. Nasse states "that the inhibitory fibers are readily exhausted by venous blood and that the splanchnic motor fibers are excitable for a longer time, inasmuch as stimulation of the splanchnics after death causes a peristalsis."

The peristalsis as the result of venosity of the blood, then, may be due to either the tonic activity of the motor fibers after removal (block) of the inhibitories, a reflex stimulation of the motor fibers; or a stimulation of the parts initiated by the environmental changes brought about by the physical, (changes in osmotic pressure and gaseous tension), and chemical alterations in the blood stream incident to its stasis. The importance of this cannot be over estimated.

[7]Nerve had been injured central to stimulation.

[8]The question of anti-peristalsis has nothing to do with this series of experiments as ordinarily planned, but as it was observed several times during the experiments and an explanation of it sought for, it was thought well to make mention of it here.

[9]Lyle, Manual of Physiology, page 160.

[10]Landois, Textbook on Human Physiology, 10th edition, page 340-2.

[11]Landois, Textbook of Human Physiology, 10th edition, page 281-2.

EXPERIMENT NO. 8

MARCH 30, 1912

Large collie. 2.00, Etherized; 2.04, respiration ceased; artificial respiration began; 2.06, artificial respiration stopped; breathing normal; 2.16, left sciatic exposed; abdomen opened; 2.20, left sciatic ligated and sectioned; 2.30, right sciatic exposed; 2.31, right sciatic ligated and sectioned; 2.34, right sciatic stimulated; respiratory movements violent; 2.35, stimulus removed; respiratory movements deep but not forced; anti-peristalsis in pyloric and prepyloric part of stomach, interval 16 seconds; 2.38, reverse peristalsis weaker; right sciatic stimulated; 2.39, amplitude of reverse peristalsis increased, interval unchanged; stimulus removed; 2.45, anti-peristalsis is still present; 2.46, stimulus removed; strong anti-peristalsis; 2.47, respiration stopped; artificial respiration given; 2.48, artificial respiration stopped; breathing normal.

2.55, Lesioned[12] in mid-dorsal; reverse peristalsis still present; 3.02, right sciatic stimulated; force of reverse peristalsis at first increased, then decreased; 3.03, stimulus removed; 3.06, right sciatic stimulated; reverse peristalsis increased; 3.07, stimulus removed.

3.07, Neck opened; 3.08, right vagus exposed; 3.08.30, anti-peristalsis still active; right vagus stimulated; anti-peristalsis stopped, peristalsis started; 3.09.30, stimulus removed; 3.10.30, left sciatic stimulated; anti-peristalsis started; 3.11.30, stimulus removed; 3.13, anti-peristalsis still present; right vagus stimulated; anti-peristalsis stopped and peristalsis started; 3.14, stimulus removed; 3.15, right sciatic stimulated. (Nerve in poor condition); 3.16, stimulus removed; no respiratory effect, no change in peristalsis. (Inspection showed that the nerve had divided high up and only the popliteal br. had been used); 3.17, peristalsis still progressing; peroneal br. of right sciatic stimulated; 3.18.25, anti-peristalsis started; 3.18.40, stimulus removed.

3.30, Left splanchnic ligated and sectioned; reverse peristalsis stopped, weak normal peristalsis began; 3.31, peripheral end of left splanchnic stimulated; 3.31.20, anti-peristalsis started; 3.32, stimulus removed; 3.36, right vagus stimulated; anti-peristalsis still present; 3.36.50, anti-peristalsis stopped, peristalsis started; 3.37.30, stimulus removed; 3.38, left splanchnic stimulated; 3.38.20, peristalsis stopped and anti-peristalsis started; 2.38.20, stimulus removed; 3.40, left vagus exposed and stimulated; anti-peristalsis still progressing; 3.40.15, anti-peristalsis stopped; 3.40.20, strong peristalsis started; 3.40.55, stimulus removed; 3.41, peristalsis still going on; left splanchnic stimulated; 3.42.30, anti-peristalsis started; 3.43, stimulus removed; animal killed.

The results in this experiment were, in my opinion, due to the old lesions. The inhibitory fibers being blocked and the anti-peristalsis being probably initiated by an action of the splanchnic nerves. The blood pressure in all cases was increased, the increase being uniformly greater before production of the lesion than afterwards. It may seem at first sight that this is inconsistent with the other results, but after careful consideration of the location of the lesion (below the cardia-accelerator region) and the function of the nerves involved and their general reflex responses, it will be more easily understood.

The lesion from its location affecting the reflex irritability of the splanchnics diminishing their visceral activity and to some extent their vaso-motor for the gastric and omental vessels, were visibly dilated after production of the lesion, while the cardio-accelerator and vaso-motor fibers of the thorax and extremities, or the vagi, would probably not be affected, giving a struggle between the various components of the so-called circulatory nervous system. That portion of it tending to maintain bodily blood pressure winning against the odds of a crippled splanchnic system and a reflexly excited vagi. This gives a very nice example of a struggle between two systems and the separation of the reflex functions of an individual nerve. The more irritable and less resistant functions according to the habits of the organism predominating.

EXPERIMENT NO. 13

APRIL 9, 1912

Medium sized dog. 4.20, Right brachial plexus isolated and nerve sectioned; 4.25, cannula in left brachial art.; 4.26, abdomen opened; 4.29, isolated nerve of brachial plexus stimulated; 4.29.20, peristalsis started;[13] 4.30, stimulus removed, peristalsis stopped immediately; 4.31, nerve of brachial plexus stimulated; 4.32, stimulus removed, stomach relaxed.

4.35, Lesioned in mid-dorsal region; peristalsis started shortly after production of lesion; 4.45, nerve of brachial plexus stimulated;

force of peristalsis increased; 4.46, stimulus removed; 4.47 peristalsis decreased; 4.47.30, stimulus applied; peristalsis increased; 4.48.30, stimulus removed; 4.50, peristalsis stopped; 4.51, stimulation of brachial plexus; 4.51.30, peristalsis started; 4.52, stimulus removed; dog killed.

(Reduced two-thirds.) Showing effect of stimulation of sensory spinal nerve before and after lesion.

SUMMARY

1. Stimulation of the central end of the sciatic or branch of the brachial plexus after lesion (rotation) in the mid or lower dorsal region causes a peristalsis in the stomach[14] and a minimal rise in blood pressure, which may or may not stop on removal of the stimulus. If a peristalsis is already progressing, this stimulus will increase its amplitude.

2. Production of a lesion is sometimes sufficient to produce a persistent spontaneous peristalsis.

3. An anti-peristalsis is occasionally observed, which is apparently due to an action of the splanchnic nerves.

CONCLUSIONS

An acute lesion[15] will affect the normal spino-sympathetic reflexes. This action is inhibition to the function of the parts involved.

The fact of a reverse peristalsis was obtained in some cases and the same effect preceded by a vaso-constriction and viscero-dilation was produced by stimulation of the peripheral end of the splanchnic nerve would lead one to think that this might affect all or only a part of the functions of the nerves involved or if such a thing be possible a perverted action of the involved nerves. This action is surprisingly constant,[16] although it varies greatly in degree.

Series No. 10.

Some Immediate Effects of Bony Lesions upon Vascular Reflexes

J. DEASON, D. O., and C. L. DORON, D. O.

The purpose of this series was to determine the effect upon dorsal and lower cervical lesions upon:

1st, Blood pressure; 2nd, Rate and amplitude of heart beat.

Methods Employed.—Animals used, dogs nine; cats, two. Anesthetic, ether given by means of a tracheal cannula, and in all cases deep and constant. The sciatic nerve was sectioned and stimulation applied to the central end by a medium faradic current. The blood pressure was taken from the carotid or femoral arteries by the usual manumetrical method. Respiration was taken from a tambour attached to the tracheal cannula by a T-tube. Normal tracings were taken on all animals before they were lesioned.

Lesions were made by traction and rotation of the cephalic end, with the lower cervical or upper dorsal fixed. Most lesions were in the sixth and seventh cervical, the dorsal lesions being difficult to obtain and make permanent.

[12]This animal's spine was very irregular in the mid and lower dorsal region; several of the vertebrae being rotated in opposite directions. It was a full blood Collie and sold to the laboratory because it was irritable when its back was touched, and as its owner put it, "No good," and was worrying the life out of him.

[13]This animal's upper dorsal region had been manipulated before this experiment began, which explains the peristalsis resulting from this stimulation (no palpable lesion had been produced).

[14]Other regions were not observed.

[15]Rotation in splanchnic region of spine.

[16]Being inconsistent in but two cases and absent in one, where, although there had been considerable manipulation of the parts, there was some doubts as to the existence of a lesion.

Literature.—Very little or no literature can be found on this subject, since only a comparatively small amount of work has been done along these lines. This series bears the same relation to vascular reflexes that series No. 9 does to visceral reflexes.

Results.—As has been proven many times, stimulation applied to the central end of the sciatic or any mixed or sensory nerve causes an increase in respiration, heart beat and blood pressure; the following is the table of the results obtained upon blood pressure, rate and amplitude of heart beat by stimulation applied to the central end of the sciatic:

BEFORE LESION

Animal No.	Rate	Amp.	Blood Pressure
1 Dog	Inc. 10%	Inc.	Inc. 7 mm.
2 Dog	Inc. 10%	Inc.	Inc. 6 mm.
3 Dog	Inc. 2%	Inc.	Inc. 2 mm.
4 Dog	Dec. 4%	Inc.	Inc. 4.5 mm.
5 Dog	Dec. 2%	Dec.	Inc. 13 mm.
6 Dog	Inc. 2%	Same	Inc. 9 mm.
7 Cat	Inc. 2%	Inc.	Inc. 9.5 mm.
8 Cat	Inc. 2%	Inc.	Inc. 6 mm.
9 Dog	Inc. 10%	Inc.	Inc. 8.2 mm.
10 Dog	Inc. 4%	Inc.	Inc. 4 mm.
11 Dog	Same	Same	Inc. 4 mm.
Average	Inc.2.9%	Inc.	Inc. 6.6 mm.

AFTER LESION

Rate	Amplitude	Blood Pressure
No Change	No change	Dec. 9 mm.
Inc. 8%	No change	Inc. 2.5 mm.
Inc. 1.8%	No change	Dec. 2 mm.
Inc. 2%	Increase	Dec. 15.5 mm.
Inc. 2%	No change	Dec. 9 mm.
Dec. 1%	No change	Dec. 9.5 mm.
No change	No change	Dec. 7.2 mm.
No change	No change	Dec. 4 mm.
Inc. 9%	No change	Inc. 3.5 mm.
No change	No change	Dec. 6 mm.
No change	No change	Dec. 2.6 mm.
Inc. 2.3%	No change	Dec. 5.3 mm.

It will be noted from these results that before the lesion was caused the blood pressure was increased by stimulation to the central end of the sciatic; this increase ranging from two to thirteen m.m., with an average of six and six-tenths m.m. After lesion was produced, the same stimulation caused a decrease in blood pressure except in two cases. This decrease ranged from two to fifteen and five-tenths m.m., with a general average of five and three-tenths m.m. In the two exceptions, the first (Dog No. 2) the increase in heart beat was excessive, yet the blood pressure did not increase as much as before lesion. In the second case (Dog No. 9), the heart beat was less than before lesion, but not enough to account for the change in blood pressure.

The rate of heart beat after lesion was not materially increased except in two instances. The amplitude, which before lesion was increased by stimulation, showed no increase after lesion, except in one case and that was very slight. All of these results were obtained within thirty or forty minutes after the lesion was made. After that time, the normal function was regained. When a subluxation was obtained that was permanent, the normal functions were not regained. These were only obtainable in small dogs. When a greater strength stimulus was used after the lesion than before, normal functions were obtained.

The following is a tracing showing the decrease in blood pressure due to stimulation of the central end of the sciatic after a lesion was produced.

Summary.—Stimulation of an afferent or mixed nerve caused a fall in blood pressure and a decrease in heart rate and amplitude, with a bony lesion in the region of the cardio-autonomics.

(Reduced two-thirds)

CONCLUSION

The above results corroborate the findings obtained in Series No. 9; e. g., an acute lesion will affect the normal spinal sympathetic reflexes. This action is an inhibition to the functions of the parts involved. That the fall in arterial pressure was not due entirely to the rate and amplitude of heart beat can be seen from the results obtained. Stewart states* freezing of the cord in the lower cervical region causes a marked fall in blood pressure due to loss of vaso-constrictor tone. May this decrease in blood pressure, as a result of osteopathic lesion, not be caused by the block of the vaso-constrictor fibers in this region, causing a loss of tone in the artery walls and a corresponding fall in blood pressure? It is also possible that the stimulus, unable to be communicated to the heart and blood vessels through through the nerves of the lower cervical and upper dorsal regions, reach these structures by way of the vagi, retarding the heart action and causing a vaso-dilation.

Effects of Osteopathic Lesions Artificially Produced, Not Due to Spinal Shock.—It has been suggested by certain research workers in physiology in the regular medical schools that the results obtained from the produced lesions in animals by osteopathic workers might be due to spinal shock. The physiological meaning of "spinal shock" is that there are certain well marked and far-reaching disturbances of the central nervous system which result from trauma to or partial or complete section of the spinal cord. There is no reason for discussing here the various theories of spinal shock, but we shall try to show that the results obtained by us could not be explained by this phenomenon.

1st. The osteopathic lesion affects particularly the nervous system supplying visceral structure (spinal autonomics). The skeletal musculature being less often affected, just the opposite to this occurs spinal shock; viz., the skeletal muscles are most often involved. Sherrington states as follows:

> It is noteworthy that spinal shock takes effect on just those which waste when the synaptic nervous system is destroyed, namely, the skeletal muscles. When the primitive diffuse nervous system, the nerve net exists as in the visceral and vascular musculature, neither *spinal shock* nor atrophy occurs consequently to spinal transection and after total transverse lesion of the cord in man the depression of function of skeletal musculature is profound and practically permanent. On the other hand, the depression of visceral function seems hardly greater in man and the ape than in rabbit or frog.

2d. Quoting again from Sherrington, "The shock takes effect almost exclusively in the aboral direction," which fact has been corroborated by most workers on this subject. On the other hand, the effects of osteopathic lesion may and, as a rule, will involve structures on either or both sides (cephalic and caudal to the point of vertebral separation) equally.

3rd. Spinal shock materially affects the blood pressure, causing a marked decrease and destroys the vaso-motor reflexes. Sherrington states: "When, in the dog, complete trans-section of the spinal cord, through the eighth cervical segment is practiced, a severe fall in general arterial blood pressure ensues and vaso-motor reflexes cannot be elicited."

The effects of the bony lesion produced in this area (References Series Nos. 2 and 8) are, as a rule, just the opposite to this; viz.: That an increase in blood pressure and often an increase in rate and amplitude of heart beat result. The production of the lesion, that is, the possible effect or effects of manipulations used by us or the "strain" on the nervous system following these manipulations, could not be due to spinal shock because no marked fall in blood pressure has ever been found, and the vaso-motor reflexes are never completely destroyed. The fact that lesion or "spinal strain" in some areas of the spine produces an increase in blood pressure, while in other areas

*Sixth Edition, page 167-8.

the opposite effect is produced, and the fact further that no such effects are obtainable from spinal shocks, again differentiate them.

4th. Paralysis, partial or complete, of certain muscles or groups of muscles, according to the extent of the lesion, is common in spinal shocks. This is not true of osteopathic lesions. Of all the animals operated in this laboratory (about 140 dogs, cats and monkeys), not a single animal has ever shown any signs of paralysis. There was often tenderness about the affected part, but no symptoms of direct injury to the cord, and therefore no symptoms comparable to spinal shock. Extreme care was always exercised to not produce complete luxations, and there was never a case of bony fracture, ligamentous tear or complete luxation produced from our attempts to produce subluxations or what may properly be termed osteopathic bony lesions. We have, of course, not obtained functional disturbances from every attempted lesion, but by far the greater number of such attempts have been followed by functional disturbances, and this could not have been due to spinal shock.

5th. The blood pressure effects from spinal bony lesion last several minutes, after which (if the lesion is only a spinal strain, i. e., if it is not a permanent subluxation) it returns to normal. This effect is somewhat similar to spinal shock, except that the time necessary for normalization is much longer. If the shock is due to complete trans-section, several days are necessary for recovery. It might be argued that because the higher animals, man included, are more susceptible to spinal shock and recovery occurs slower, that in the human the effect which we hold as being results of bony lesions could be due to spinal shock. This, we believe, is hardly tenable for the following reasons:

6th. In case of spinal shock, recovery of the structures supplied by the autonomic nervous system, visceral structures, occurs, which varies directly with the time and inversely with the phylogenetic developmental stage of the animal in question. On the other hand, as a rule, the effects of a permanent bony lesion increase with time. That is, in case of lesions of long standing, the perversion of physiological effects and the extent of pathological change is also increased.

7th. Spinal Shock and Spinal Strain: Since the phenomena of spinal shock are insufficient, what is the explanation of perversion of certain physiological functions following slight subluxations of vertebrae and other joints? We expect to offer some suggestions in answer to this question after the results of all of our work of this year have been published and the results have been summarized. With the experimental information which we now have at hand it is safe to say that subluxations, due to trauma muscular contractions, decreased tone in ligaments and muscles about the point, etc., may be capable of producing widely different effects. The first, the subluxation due to trauma is comparable to the artificial bony lesion, and this we may say produces its effects by spinal strain. By spinal strain is meant the effects on the nerves in the immediate relation with the joint or joints involved. The stretching or compression of the joint structures might, by mechanical stimulation to either the efferent or afferent nerve elements, produce an increased activity of these fibres or nerve trunks. This, if the perverted structural relations are not permanent, would be temporary and a corresponding temporary inhibition or decreased functional activity of the nerve elements would follow, which lasts for varying lengths of time, after which normal functional activities of the nerves may be demonstrated. The fact that a temporary increase in blood pressure, etc., followed by a decrease, usually follows such manipulations tends to substantiate this theory. This explanation alone, however, is hardly sufficient for a complete explanation of all the results that follow "spinal strain."

What, for example, is the explanation of the decreased activity of the efferent nerves from segments of the spine which are so lesioned? Why are the blood pressure, heart beat, etc., not increased by stimulation of the central end of an afferent or mixed nerve after a "spinal strain" has been produced in the upper thoracic region as much as before? Why do not the splanchnics inhibit peristalsis of the intestine from stimulation of a sensory nerve after lesion in the mid or lower thoracic as they almost invariably do before such "spinal strain" was effected?

The fatigue of the nerve elements may and probably do have much to do with this, but we believe the disturbance of both the afferent and efferent vascular elements play a more important part. It is known that the functional activity of the neuron varies directly with the arterial supply and the venous drainage. This is readily understood when we consider the nerve cell as any other cell and that it must have oxygen and other food elements from the blood that it may be able to function normally. Furthermore, it must have a good drainage, that its carbon dioxid and other products of metabolic waste may be removed. As Sherrington so excellently puts it, "In the first place, nerve cells, like other cells, lead independent lives,—they breathe, they assimilate, they dispense their own stores of energy, they repair their own substantial waste; each is, in short, a living unit with its nutrition more or less centered in itself. Here then, problems of nutrition, regarding each nerve cell and regarding the nervous system as a whole, arise comparable with those presented by all other living cells." This explanation as offered here relative to the blood supply for the decreased activity of nerve tissue was not borrowed from the old stock answer given by most osteopaths when asked how the lesion produces its effect. It is not an answer given from hasty evidence or none, as we often hear the answer "Nature does it." It is not a guess at which we have blindly jumped or a shield behind which we may conceal our supreme ignorance, but a scientific conclusion at which we have arrived after having given careful consideration to the experimental evidence at hand.

Drs. McConnell and Farmer have found that the structures about the joint after such lesions were produced were much congested and we have found the same to be true. We have found further that it is not possible to obtain normal efferent effects by afferent stimulation until long after the immediate effects of the "spinal strain" have seemingly ceased. We have found that the stimulation of the efferent nerve trunk after stimulation produces normal functional effects as it did before lesion, therefore the trouble must lie within the cord or other seat of nerve cell origin. Just here, by way of explanation, we should say by this the explanation of the decreased functional activity of the spinal autonomics from reflex stimulation after spinal lesion, as has been demonstrated in this and the preceding series (No. 9), depends upon the structural and functional differences between the conducting mechanism in nerve trunks and the reflex arcs of the cord, particularly the synaptic arc.

The conductivity in the reflex arc presents many characteristic differences from that of nerve trunks, as follows: "Slower speed as measured by the latent period between application of stimulus and appearance of end-effect, this difference being greater for weak stimuli than for strong." * * * "Fatiguibility in contrast with the comparative unfatiguibility of nerve trunks." * * * "Much greater dependence on blood circulation, oxygen (Verworn, Winterstein, V. Baeyer, etc.)" It is, then, this intercellular connecting mechanism, that which carries the energy from axon to dendrite within the gray matter of the cord and is transmitted to or serves to excite to activity the intracellular energy of the efferent neuron, which is most affected and which offers resistance to the passage of impulses in reflex block. It has been shown (Series

Nos. 2, 5, 8 and 9) that this condition, which we may now call reflex block, is maintained as long as the structural perversion (bony lesion) is maintained, and that a return to normal always results from five to sixty minutes after the vertebral perversion has been released. This time allows for the normalization of the blood supply to the synaptic portion of the reflex arc. We are, of course, referring to the immediate effects of experimental bony lesions and not to chronic lesions.

This explanation we do not mean to exclude all possible effects of direct nerve stimulation by mechanical pressure to the nerve trunk or to sensory endings in or about the joint. We know of no experimental evidence to show that that direct nerve stimulation is not a possible explanation of certain phenomena following bony lesions. But this will be discussed in another series in which some work has been done along this line.

Series No. 12.

Vertebral Lesions and Osteopathic Therapy

J. DEASON, D. O., A. R. BELL, D. O., and T. L. McBEATH, D. O.

The purpose of this series of experiments was to try the effects of osteopathic lesions on monkeys, and if possible, after functional disturbances had occurred, following the production of bony lesions, to determine the effects of corrective manipulations on these animals. Monkeys were selected for this work because of their closer resemblance, structurally and functionally, to the human species.

Literature.—Animal experimentation for the purpose of determining the effects of osteopathic bony lesions on functional disturbances, pathological changes, etc., has now been done on hundreds of animals and by different workers, the published results of which should be common knowledge to every student and graduate of osteopathy. The columns of this, as well as other osteopathic journals, have contained these reports for several years. We therefore need to make no detailed references to this work. This series, however, presents some new features of experimental work which, so far as we know, has never been tried before, viz., an attempt to relieve the functional disturbances which followed the production of the osteopathic bony lesion, by a correction of the artificial bony lesion which seemed to have caused the disturbance.

Since it has been demonstrated that functional disturbances can be produced by artificial bony lesions, why should we not hope to relieve the functional disturbances by the correction of these same lesions We have always believed that if the bony lesion was the cause of functional disturbances that this, if true, could be demonstrated on animals; and it has been so proven. Drs. Burns, McConnell, Farmer and others, besides those working in our laboratories here, have shown this, and while there are many minor differences of opinion regarding certain details, our general findings agree remarkably well, much better, in fact, than do the results of the various research workers in other schools of practice.

EXPERIMENTAL METHODS EMPLOYED

There were many difficulties attendant upon such a series of experiments, probably the greatest of which was the proper care of the animals. Twelve monkeys were used, aged from two to three years. One was a very old monkey, and therefore almost valueless. Most of the animals were too young, as it was often difficult to get lesions to "stick," their spines being so cartilaginous. Some of our animals were in poor health when they arrived and died of either pneumonia or tuberculosis before they had been normalized. No animal which was found to be unhealthy was lesioned.

Care of animals.—Each monkey was kept in a separate cage, an iron frame covered with wire netting; the floor of which was of hardwood cloth under

which was a zinc pan for the purpose of draining the urine into containers. Each cage was 30"x30"x20", which gave the animal plenty of room. These cages were cleaned regularly by washing with a hot water and steam hose. The animals were fed twice daily and the diet kept as regular as possible, which consisted of apples, corn, cabbage, parsnips, toasted bread, etc.

The greatest difficulty met with in the care of the animals was the proper heating and ventilating of the rooms in which they were kept. Heat was furnished by steam radiators and a large stove was also used during the coldest weather. It was often impossible to maintain a sufficiently even temperature and at the same time furnish plenty of fresh air. We believe this contributed to the pneumonia which caused the death of four animals.

Normalization.—Samples of urine were taken daily and analyzed. The character, consistency and amount of feces were noted, the appetite was observed and the weight of each animal recorded. All animals were kept from four to six weeks under observation before they were lesioned. Monkeys Nos. 2, 3, 4 and 10 died from pneumonia within three weeks after they were received, but only one other animal (monkey No. 11) showed any symptom of disease during normalization, and this case will be recounted later.

During normalization, all animals either remained constant or gained in weight except No. 11, which lost weight from 2,200 to 1,800 grams. This monkey had tuberculosis when received.

No. 1. Young Java monkey, increased in weight from 850 to 900 grams.
No. 5. Rhesus monkey, increased in weight from 1,545 to 1,625 grams.
No. 6. An old Ring-tailed monkey, increased from 1,765 to 1,800 grams.
No. 7. Ring-tailed monkey, remained almost constant in weight at 1,000 grams.
No. 8. Rhesus monkey, gained in weight from 2,000 to 2,400 grams.
No. 9. Ring-tailed monkey, increased in weight from 1,000 to 1,050 grams.
No. 12. Rhesus monkey, remained almost constant in weight at 2,400 grams.

The fact that these animals remained constant or gained in weight during the period of normalization shows that they had good care and were free from disease up to the time of lesion. There were no symptoms or signs of disease (other than No. 11 given above), except occasional variations in urinary findings, the reasons for which will be stated later.

Method of producing lesions—The animals were placed under deep ether anesthesia and lesions produced by fixing the vertebra at the point desired and rotating the animal's body. In some instances it was only necessary to manipulate the processes of the vertebra between the thumb and fingers to effect rotation, but in most cases we tried to produce lesions which would involve two or more segments at the same time. All lesions produced were rotations. We were always careful in the production of lesions to not cause sufficient trauma which could in any way produce a fracture or ligamentous strain; therefore no traumatic effects to the cord were ever produced.

Results.—The functional disturbances following lesion in each animal will be given under headings significant of the disorder produced, for the purpose of clearness. Nutritional Disturbances, following lesions in the upper thoracic region:

Monkey No. 5. Lost in weight from 1,625 to 1,425 grams during four weeks following lesioning. After the lesion was corrected, this animal increased in weight to 1,520 grams in two weeks.

Monkey No. 7. Lost in weight from 1,020 to 900 grams during two weeks. Correction of the lesion was not tried. (See special note on No. 7.)

Monkey No. 8. Lost in weight from 2,400 to 2,075 grams during four weeks and regained to 2,225 two weeks after lesion was corrected.

Monkey No. 9. Showed a slight gain for one week and then lost from 1,050 to 925 grams during the three following weeks. Two weeks after correction of lesion, this animal gained in weight to 1,000 grams, its normal weight.

Monkey No. 12. Lost in weight from 2,400 to 2,112 grams during four weeks following lesioning, and regained to 2,150 two weeks after lesion was corrected.

Monkeys Nos. 1, 6 and 7. Were kept for control; i. e., they were kept un-lesioned on

the same food supply in the same room with all environmental conditions the same. During all this time Monkey No. 1 showed a constant gain from 900 to 1,000 grams. Nos. 6 and 7 remained constant in weight.

This we believe controls the experiment quite well and the cause for this loss in weight of the four lesioned animals would seem to be the thoracic lesion. By reference to the above discussion on normalization, it will be seen that only normal animals were used and that those which had been showing a constant increase in weight during the period of normalization showed a marked decrease after lesioning. We should not, of course, be so hasty as to conclude that the upper thoracic lesions are always followed by loss in weight, nor would we ever assert positively that the lesions were responsible for the decrease in weight in these cases. Too few animals have been tried and the test has not continued long enough to make positive statements.

INTESTINAL DISTURBANCES FOLLOWING THORACIC LESIONS

Seven monkeys were lesioned, some in the mid- and some in the lower thoracic region. Intestinal disturbances and variations in the urinary findings were noted after these lesions. The results of urinalysis will be given later. The intestinal changes only are to be given under this heading.

Monkey No. 1 showed no symptoms at all that we could observe; there was no diarrhea nor constipation at any time.

Monkey No. 5. The next day after lesioning this animal had a marked diarrhea, which increased for one week, when the lesion was corrected. After correction of the lesion, the diarrhea stopped and remained normal for a week, when the lesion was reproduced. This was followed by diarrhea as in the first instance, except that it was more severe. Nine days later the lesion was corrected, and as before, this treatment was followed by an immediate cessation of the diarrheal condition. This monkey was lesioned the third time, twelve days later, which caused the same symptoms, but this time treatment seemed only to offer a termporary relief. We were never able to stop the condition, which grew constantly worse, until the animal was killed, one month later. There was some loss of weight during this time, but we think this was probably due to the extreme diarrheal condition, rather than any interference with systemic metabolism, as the animal's health was otherwise good.

Monkey No. 6. Showed no intestinal disturbances, but was only kept in lesion a few days. (See special discussion of Monkey No. 6.)

Monkey No. 7. Showed a slight diarrhea for a few days only. Corrective treatment was not tried. (See discussion on No. 7 elsewhere.)

Monkey No. 8. Showed a slight diarrhea the following day after lesioning. This continued so for fifteen days, when the lesion was corrected. The diarrhea stopped and stools remained normal for a week, when the animal was re-lesioned. Diarrhea again occurred, which lasted for a week and stopped after a second correction of the lesion. The diarrhea was never severe in this animal, and there was a constant increase in weight during the entire time.

Monkey No. 9. Showed no diarrhea or constipation after these lesions and the weight remained nearly constant.

Monkey No. 11. A severe diarrhea developed in this animal after lesioning, and as in No. 5, immediately stopped after the lesion was corrected. This animal was lesioned in both upper and lower thoracic regions, but was not tried a second time. (See discussion No. 11 below.)

No. 12. After lesioning, this animal showed diarrhea almost immediately, which continued for one week and stopped after correction of the lesion. The animal was re-lesioned seven days later, and a diarrhea appeared which, though not so severe as in No. 5, continued for three weeks, when corrective treatment was followed by normal feces. This animal continued to gain in weight during the time of lesion. It was kept un-lesioned for one month longer, when it was killed for pathological examination. No diarrhea appeared during this last month and the weight increased in greater proportion than during the period of lesion.

URINARY FINDINGS

Samples of urine, free from feces and other contamination, were collected daily when obtainable. Urine was collected in clean granite-ware receptacles and from these transferred to glass beakers for analysis. All samples represented a twenty-four hour elimination and were examined fresh. So far as the urine held out, the following tests were made, precedence being given to sugar, albumen

and urea, as the more important constituents:

1st. Any cloud present was tested for mucin, phosphates, urates, pus and bacteria.

2d. Color was recorded according to Vogel's color scale.

3rd. The specific gravity was taken by means of a standardized urinometer and test jar.

4th. The amount of solids was estimated by the use of Haesser's factor (2.33).

5th. The chemical reaction was obtained by using both red and blue litmus paper. When alkaline, the alkalinity was determined whether due to fixed (sodium and potassium) or volatile (ammonia) salts.

6th. The amount of urea was determined by a Hinds-Doremus Ureometer, and a freshly prepared solution of sodium-hypo-bromite. Hufner apparatus was also used on some of the animals.

7th. Albumen tests were made by Heller's nitric acid test and the acetic acid and heat test. Any traces shown by these methods were confirmed by Esbach's picric acid test. Quantitative tests were made by the Esbach twenty-four hour method.

8th. In the estimation of chlorids, a standardized 12½% solution of silver nitrate was used.

9th. Phosphates were determined by use of magnesium mixture.

10th. Sugar tests were made by Haine's, Fehling's and Benedict's tests. Quantitative tests were made by Einborn's saccharometer, controlled by a tube of distilled water and by a tube of one per cent. glucose solution. Sugar was reported in no case unless confirmed by both a copper reduction test and the fermentation test.

11th. Indican tests were made by means of Obermeyer's reagent and extraction by chloroform, the urine having been previously decolorized by a drop of lead acetate solution.

12th. Blood tests were made by means of old turpentine and a fresh tincture of guiac (Haine's blood test).

13th. Acetone tests were made by Legal's and Lieben's tests, the urine having been previously distilled with phosphoric acid.

All tests were checked by control tubes of distilled water. The apparatus used, as beakers, tubes and other glassware, was carefully and thoroughly cleaned after use and stored in dustproof lockers. Test tubes used for sugar tests were kept separate from the others and cleaned in nitric acid to remove any precipitate of copper oxid. This aided to eliminate any fallacious reduction. All urine used in the tests was carefully filtered and in the reduction test for sugar, any albumen was removed by boiling and filtration.

Following is a summarized record of each animal used:

Monkey No. 1. Seven analyses, covering a period of five weeks, were made. During the time of normalization and on one day only was sugar found. This amounted only to slight trace and might be explained by the fact that an excess of bananas was given in the diet at this time, which seemed to produce alimentary glycosuria.

The lesion produced was in the mid-dorsal area of the spine. On the second day after the production of the lesion, sugar appeared in the urine and continued to show for ten days. The amount present averaged one per cent. daily for the entire ten days.

Monkey No. 5. During the time of normalization, this animal showed an average of two-tenths of one per cent. sugar in its urine. At the same time, the monkey gained one hundred grams in weight, which would tend to show that the glycosuria was of the alimentary type, since in pathological glycosuria loss of weight invariably occurs.

A mid-dorsal lesion was produced and in the eight following days the average daily elimination of sugar was fifty one-hundredths of one per cent. After correction of lesion, this animal showed an average of two-tenths of one per cent. of sugar for two consecutive days, and for the following six days the urine was absolutely free from sugar. During period of lesion this animal lost constantly in weight.

Monkey No. 8. During time of normalization, seventeen analyses were made. For seven days of this time the daily average was twenty-four hundredths of one per cent. of sugar. (It was during these days that the banana

diet was used.) During the remainder of the normalization period the urine was free from sugar, giving a daily average of one-tenth of one per cent for the entire time. After the production of a mid-dorsal lesion, the urine showed a daily average of four-tenths per cent. of sugar for the ten following days.

After reduction of the lesion, analyses were made for the five following days. These showed slight traces of sugar for the first two days and sugar-free urine for the remaining time.

Monkey No. 9. During the normalization period, nine analyses were made. The daily sugar average was eight hundredths of one per cent. This animal was kept in lesion one week and during that time showed a daily average sugar elimination of thirty one-hundredths of one per cent. After reduction of the lesion, sugar-free urine was voided.

Monkey No. 11. This animal was normalized for a period of four weeks. Seven analyses were made during this time and only once was sugar found. This gave a total daily average of five hundredths of one per cent. For the following ten days, after the production of a mid-dorsal lesion, this animal showed sugar every day except two, giving a daily average of thirty-six one hundredths of one per cent. Correction of lesion in this animal was not effected.

Monkey No. 12. Normalization record was kept on this animal for one month, during which time eight analyses were made. These showed a daily average of fourteen one hundredths of one per cent. sugar. A mid-dorsal lesion was produced. The urine on the following day showed sugar and continued to do so for eight days. The average amount during this period was forty-eight hundredths of one per cent. daily. Eleven analyses were made after correction, which showed a daily average of six hundredths of one per cent.

Tests for acetone and di-acetic acid were made on the animals during the time they were showing sugar, but at no time were such substances found present.

The presence of sugar in the urine during the period of normalization was in all probability due to an excess of bananas being given in the diet, as the sugar appeared in all the animals' urine at the same time and at a time when bananas were being heavily fed. After taking the bananas from the diet and using grain and acid fruits instead, the sugar elimination ceased. This same diet of grain, apples, etc., was used during the times of lesion and following correction and was kept constant, no variations being made in it.

SUMMARY

All animals used showed a much increased amount of sugar elimination during time of lesion, which was either greatly reduced or entirely eliminated when the bony subluxation was corrected. We believe the sugar elimination to have been pathological as the animals constantly lost weight during the same time. Other abnormal changes appeared in the urine during these times, but as a continuous record of these was not obtainable, owing to the small amount of urine voided daily being used for the sugar tests, no report is made concerning these disturbances.

The presence of such amounts of sugar as appeared during the time the animals were in lesion definitely shows this: That in some manner bony subluxations produced in the mid-dorsal region of the spine deranged body metabolism, and caused functional disturbances of the nutritional processes.

OTHER FUNCTIONAL DISTURBANCES FOLLOWING LESION

Monkey No. 7. This animal was kept under observation for fifty-eight days before lesioning. During this period the animal was in perfect health and increased some in weight. After lesion in the upper and mid-thoracic region, the animal lost in weight from 1,020 to 900 grams in two weeks. It then contracted pneumonia and died in three days after the first symptoms appeared. On post-mortem the lungs were found badly congested.

Monkey No. 11. This was a female Rhesus monkey seemingly in good health, except that it coughed occasionally. Bacteriological examination of throat smears failed to show any specific infection. After lesion in upper dorsal, there was an extreme diarrhea, and the cough grew worse. The diarrhea stopped after corrective treatment applied to the lower

thoracic region, but the cough and other symptoms increased. The animal was now losing weight very fast. It seemed to be hungry and ate well, but gradually grew weaker and became very inactive. Extreme swelling of the face region and much cyanosis had developed one week later, when it died.

Post mortem examination showed a general systemic acute miliary tuberculosis. Practically every visceral structure was involved. In this case we are quite sure that the animal had tuberculosis when it was received, but certainly in these two animals there is much reason to believe that the lesions acted as in the one case (No. 7) predisposing, and in the second case (No. 11) an exciting factor to the infective processes.

Monkey No. 6. This was an old Ringtail, but was in good physical condition when received and remained so for two weeks, the appetite was good and the urine feces were normal. At this time it received a severe fall. Its keeper accidentally threw it hard against the floor when it tried to bite him. The animal gave evidence of an injured neck; after four days it was not so lively and seemed ill; ten days later there was trouble with its right arm; it would put the left arm only out for food and did not use both hands ambidexterously as formerly, and as all monkeys do while eating. A few days later the right leg was involved. This gradually progressed until the right arm was completely spastic. The left limbs were also involved and the left arm showed signs comparable to intentional tremor when it reached for food. It was very irritable during the entire time. After death, on post mortem examination, the atlas and axis were both found to be slightly anterior and rotated to the right. There were no other bony lesions, nor was there any evidence of trauma to the cord. We think the symptoms could not be explained by the theory of "Spinal shock." Probably the term "spinal strain" of an extreme type, some of the effects of which have been given in a previous series, would explain the causes in this case.

REPORT ON PATHOLOGY

T. L. MC BEATH, D. O.

The animals were killed by administering ether, and were posted by Dr. Deason and myself. The skin was carefully dissected from the median line and laid back. The abdomen was opened and the viscera examined before removed. The blood vessels were ligated and the viscera removed entire and placed in sterile beakers containing normal salt solution, where they were washed two hours; then in Zenker's fluid thirty-six hours; running water twenty-four hours, after which dissection was made and tissues cut into small pieces, two by four centimeters thick, and placed in 50 per cent. alcohol, tinged with iodin to color of sherry wine to dissolve out the mercury.

Hardening Process.—Tissues were passed through different grades of alcohol, 70, 80, 90 and 95 per cent., absolute, 24 hours each. Dehydration; ether and absolute alcohol, half and half, 24 hours.

Embedding; thin celloidin 5 per cent., 36 hours; thick celloidin 12 per cent., 36 hours; and then placed in dishes filled with thick celloidin and allowed to harden 24 hours.

They were then removed and trimmed into small pieces and mounted on wooden blocks, allowed to stand one hour and placed in 80 per cent. alcohol to harden.

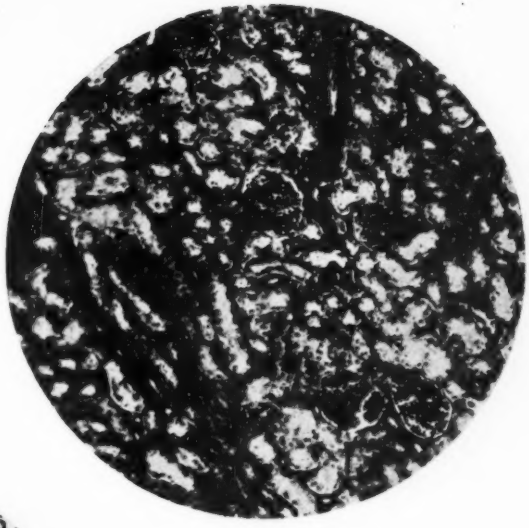
Sectioning.—Specimens cut 10 microns thick under 80 per cent alcohol and placed in 80 per cent alcohol, then transferred to distilled water.

Staining.—Hematoxylin, 5 minutes; wash in distilled water three washings. Destain 1 per cent. acid alcohol and transferred to water. Easin, 2 per cent., 1 minute, wash in 95 per cent alcohol three washings. Clear in creosote solution, (creosote, 50 cc.; cedar wood oil, 50 cc.; oil of Bergamot, 25 cc.) Blot thoroughly and mount in Canada balsam. Bake in oven, heated to 70 degrees Centigrade, 2 hours.

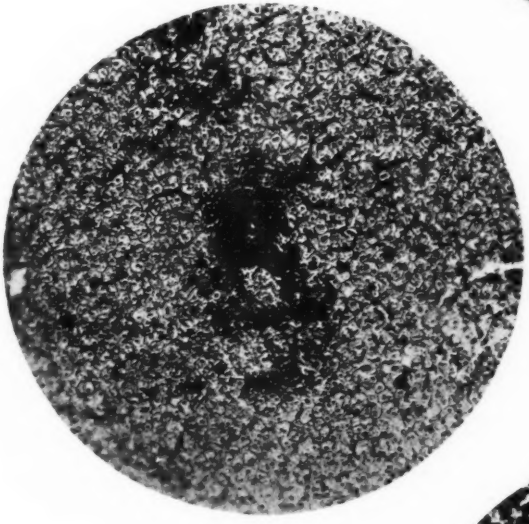
RESULTS

Pancreas—Shows infiltration of fibrous tissue running in between the glandular structure. The Islands of Longerhaus show fibrosis, (fibrous tissue surrounding and infiltrating into the glandular structure of the islands.)

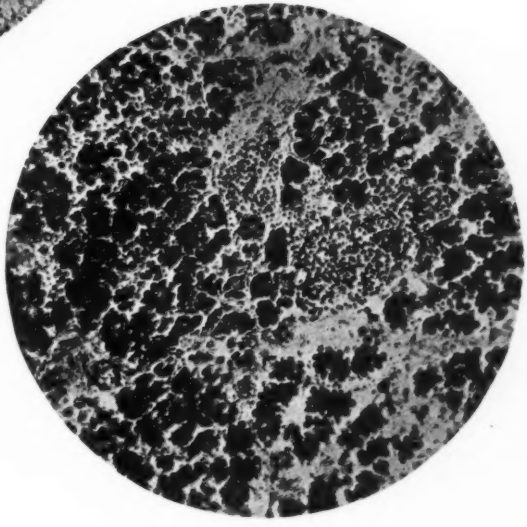
Kidneys—Show slight albuminous degeneration in the first convoluted tubu-



Section of Kidney showing Albuminous degeneration. Taken from Monkey lesioned in lower thoracic region.
X 120 diameters—(Reduced 20%)



Section of Liver taken from Monkey lesioned in mid-thoracic showing small abscess and albuminons degeneration
X 120 diameters—(Reduced 20%)



Section of pancreas from Monkey lesioned in mid-and lower thoracic regions. Islands of Langerhaus show fibrosis.
X 120 diameters—(Reduced 20%)

ler in cortical area, the renal epithelium is frayed into the lumen and the cytoplasm appears granular.

Liver—Outline of cell membrane intact, the cytoplasm slightly granular in intermediate portion of lobules; also small abscess near hepatic artery, showing accumulation polymorpho-nuclear leucocytes in surrounding tissue, causing slight necrosis of tissue.

Progress with Research Work

E. R. BOOTH, D. O., *Chairman of the Council*, Cincinnati, Ohio.

Report before the Research Institute Session of A. O. A., at Chicago, July 1911.

To confine my remarks strictly to the subject as announced on the program would require but little if any time from me, except to supplement what our researchers, those who are to follow me, omit because of their own modesty. These reports will present, briefly, what has been done during the past year by those who have been working directly under the auspices of the Council of the A. T. Still Research Institute.

This is an opportune time to present to the American Osteopathic Association, the originator of the Research Institute, the salient facts concerning its purpose, its spirit and its importance, as well as the reports for the past year.

It is not necessary to go into details concerning the organization of the Research Institute. These have appeared in so many forms in reports and in contributed articles in the JOURNAL that the profession has no excuse for not being pretty well informed. But the purpose of the organization has often been misunderstood, not to say misrepresented, as many of you are well aware; and this fact alone has caused the loss of probably at least two years of most precious time.

There was one primary purpose in the minds of those who fathered the movement: namely, the placing of osteopathy upon a strictly scientific basis, and as a necessary corollary the assistance of the profession in maintaining the schools and making them more efficient.

Osteopathy had resulted in the relief and cure of diseased conditions sufficient to convince the casual observer that it could do most that could be done by other systems of healing and many things in which they had proven themselves to be lamentable failures. In a general way it also appealed to the ultra scientific mind in that it is based upon a fixed principle that has been efficient in all ages of the history of animal life: namely, the harmonious relation always existing between structure and function, the influence of environment, both external and internal, upon both structure and function, and the indisputable fact that the normalization of structure and environment is always in direct line with the normalization of function. But generalizations do not satisfy the scientist—the researcher. He must prove the proposition just as the mathematician must prove, for example, that a straight line is the shortest distance between two points. No one's dictum would be accepted by any real scientist.

Our learned opposition, incredible as it may seem, even questioned our fundamental proposition, and the scientific minded in our own profession would persist in asking: Why? How do you know? What proofs have you to support your claims? Can you show me? How do you know that your patient would not have gotten well without your treatment? How do you know that a bony lesion will produce a disturbance remote from the point of derangement? How do you know that the correction of such a lesion is the real and only cause for the disappearance of the disturbance? Are there other causes than the bony lesion operative in producing and continuing

disease? What is the relationship between these other causes, if they exist, and the basic osteopathic idea? These questions and scores of others of like nature are perfectly legitimate and no scientist is content with any other than an unequivocal and convincing answer. No answer was forthcoming except here and there from a researcher who lacked facilities for thorough work, opportunity to publish his results, and in some cases inability to withstand the criticism, even the abuse and contumely, of supposed leaders in our profession.

That any man or woman in the profession competent and willing to do such work might have an incentive to engage in it and not be hampered by lack of means or encouragement was the highest ideal in the purpose of the Research Institute.

In proof that that purpose is being attained with an almost unprecedented rapidity I cite the following facts: (1) The increased sentiment in the field of practice in favor of carrying on this work; (2) The greater activity in research work in the schools; (3) The gradual change in the methods of teaching which will soon increase many fold the number of competent workers in this field; (4) The positive and unquestionable work of Dr. C. P. McConnell and Dr. Louisa Burns. The mention of only two names does not imply that there are not others who deserve the same distinction. No doubt many have sacrificed as much, received less assistance, and are in a fair way to give the profession and the world results of inestimable value; (5) The articles on research that have appeared in the osteopathic journals during the year, notable the June issue of the JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION; (6) The publication of Bulletin No. 1 of the A. T. Still Research Institute; (7) The publication since April, 1911, of Dr. Louisa Burns's "Studies in the Osteopathic Science," Volume II., The Nerve Centers, and the early publication of Volume III., The Physiology of Consciousness, the type for which is now being set.

It is not claimed that the Research Institute has done all of this nor that it only is entitled to the credit. But it must be conceded that without the faith in the ultimate prevalence of the truths of osteopathy and the conviction that they must be presented in truly scientific form, as held by those who have worked so earnestly and faithfully and made the Research Institute what it now is, these results would not have been accomplished.

That the Research Institute may fulfil its mission it is necessary that its management should have the spirit of research and every effort should be put forth to foster that spirit in the profession. The researcher is essentially a scientific student. The spirit of science is the spirit of research. Its end is the truth and its absolute demonstration. Its dictum is, I know, not I suppose, I guess, I think, I believe. It begins with a questioning belief, develops through careful and extensive observation, and ends in unquestioned knowledge. The researcher loses self in his work. To him the establishing of a truth hitherto undetermined is an attainment more precious than gold.

In order to receive credit for original scientific achievements it is often necessary to be the first in the chosen field. We give Franklin credit, and rightly, for his discoveries in electricity; yet there is scarcely a high school boy today who does not know more about electricity than Franklin ever dreamed of. On the other hand, Edison and other accomplished electricians realize how little they know about that subtle power and look to the future researcher to discover its hidden mysteries. Dr. A. T. Still opened up a new field when he discovered and declared to the world that there is an inevitable relationship between the structure and the function of each and every cell and combination of cells of the human body. His almost daily advice to us was to be discoverers, to reveal every thing

in the field that he had opened up for us. That is the spirit of research. He is to osteopathy what Franklin was to electricity. What we now want are Edisons with their painstaking scrutiny, their laboratory and assistants for the testing of every plausible theory, their instruments and other means of precision for determining and recording results, their clinical material upon which to demonstrate the efficacy of every phase of osteopathy in practice. Can the profession do greater honor to Dr. Still, advance its own interests better, or serve humanity more unselfishly than by throwing all its energy into this work?

Several things are necessary in order to do research work, even by one who has the spirit for it. (1) He should not waste his precious time and energy rediscovering what is already set forth in an open book, as it were, before him. He should have that knowledge well in mind, determine his field for operation, and proceed at once to prove or disprove what may be believed or suspected but not already established; (2) He should hold himself rigidly to a given line of thought and not allow himself to be sidetracked by criticism or obstacles till his purpose is accomplished: namely, the truth or falsity of the proposition, and, if the former, its practical application; (3) He should present such a clear statement of his proposition and his methods of procedure that another person of like attainments and adequate facilities for work could verify for himself every step and the conclusion; (4) He must not make the mistake of accepting the fallacy, *"post hoc, ergo proter hoc,"* "after this, and therefore in consequence of this." That is a fatal error for a researcher. Every procedure in the healing art has scores of claims to success if that error is accepted as truth. No doubt many, perhaps most, of the supposed cures made by the oldest as well as the youngest cults have no other foundation than this fallacy. The sequence of time alone are of very little value to the scientist. The relation of cause and effect, in which time may be an important factor, must be determined.

Joel E. Goldthwait, M. D., of Boston, is gaining quite a reputation with the "regulars" for his studies of dislocations of the sacro-iliac and the lumbo-sacral joints and disturbances because of anomalous structures in those regions. He evidently began with the facts established by osteopathy but was not content to stop there. He has evidently made a careful study of the subject from a purely scientific standpoint, real research work, and his conclusions have been published for the benefit of progressive M. D.'s, those who read their journals and try to keep abreast of the times.

I attended two sessions of the meeting of the American Orthopedic Association held in Cincinnati last May. I heard a very learned and interesting paper on "An Unusual Pathological Condition at the Sacro-Iliac Joints, Causing Sciatica," which aroused no enthusiasm whatever, but when Dr. Goldthwait followed him with a short talk illustrated by two or three sacra and their adjacent bones, every one in the audience was on foot, or tiptoe, to see what he was explaining. Many even climbed upon the chairs, so eager were they to learn the truth about what they ridiculed so freely only a few short years ago.

Dr. Goldthwait is doing just what scores or even hundreds of osteopaths ought to be doing. Hitherto our enthusiasm has been confined almost wholly to the demonstration of a new "movement" or a new way of giving a "treatment." This is unobjectionable as far as it goes. Stopping there, we leave the great field of research to others and we must not lull ourselves to sleep in the belief that our enemies are asleep also. The truth concerning the minutest details relating to the human body in health and disease will in due course of time be revealed. Is the truth to be given to the world by us or by those who would destroy it?

TRACTION BUILDING.

Transportation Notes

The Transportation Committee has rendered very efficient service in securing the best routes to Detroit and designating the trains which will meet the convenience of the greatest number who will attend the meeting.

It is urged that our people, as far as may be possible, use these official routes. It will give our meeting very much more publicity if those attending it use the same trains. Besides, it will add greatly to the pleasure of the trip if made with many of their friends and fellows, and in addition to this these roads have gone to considerable expense in advertising these trips and giving our meeting publicity thereby, and it is simply fair that we reciprocate by using the lines where possible.

From Southern California the route lies over the San Pedro and Salt Lake Railroad to Salt Lake City; from San Francisco over the Southern Pacific to that point, thence over the Denver and Rio Grande to Denver, thence to Chicago over the Rock Island. The train No. 6 leaves Pueblo at 8:20 p. m.; Denver and Colorado Springs, 10 p.m.; Omaha, 4 p. m. next day; Des Moines, 9:15 p. m., reaching Chicago 7:25 a. m.; or from Omaha and intermediate points one may leave Omaha at 6 p. m., Des Moines 10:40 p. m., and reach Chicago at 8 a. m.

From the Northwest the official line is the Chicago and Northwestern Railroad. Train No. 500 leaves Minneapolis 7:55 p. m.; St. Paul, 8:30 p.m.; Eau Claire 11:25 p. m.; reaches Chicago 9 a. m.

From St. Louis and the Southwest train No. 24 of the Chicago and Eastern Illinois ('Frisco Lines) leaves St. Louis at 11:40 p. m. and reaches Chicago 7:45 a. m.

The special train from Chicago to Detroit over the Michigan Central will leave the Central Station, Twelfth street and Michigan avenue, at 10 a. m., Monday, July 29, and arrive in Detroit at 5 p. m. the same day. There should be at least 500 people to occupy this train. If the osteopathic physicians and friends who attend the meeting West of Chicago will use these lines and reach Chicago early Monday morning, they are assured of a most pleasant ride to Detroit and at the same time take a train load of people which will be evidence to thousands of a great meeting of the osteopathic profession.

From the South and Southeast the Queen and Crescent is the official route. This line runs through most of the large cities from New Orleans to Cincinnati and thence with the C., H. & D. and Big Four makes a splendid route direct to Detroit. The advertisement of this line appears in the JOURNAL, and it is urged that all who possibly can make use of it, for they are assured of excellent service and will also meet a number of acquaintances travelling to Detroit.

From the East, the route lies over the Lehigh Valley. The adv. printed in this issue gives the essential facts regarding two very desirable trips. Plan number one contemplates leaving New York at 6 p. m. Saturday, July 27, and insuring a delightfully cool night through the mountains of Pennsylvania, reaching Buffalo early Sunday morning. The day may be spent in Buffalo or at Niagara Falls and leave Buffalo at 6 o'clock by boat over the Cleveland and Detroit Line, reaching Detroit 8 a. m. Monday.

Those from Philadelphia leave over the Reading about the same hour for South Bethlehem which connects with the New York train and those from Baltimore, Washington and intermediate points should reach Philadelphia in time for this train. This assures several special cars, and the Lehigh will give every accommodation and render every service possible. The road burns anthracite coal

which insures the minimum of dust and soot.

For those who wish to make a quicker and all-rail trip, leave New York at 2 p.m. Sunday over the famous Black Diamond express. Those from Philadelphia and the South leave Philadelphia about the same hour. Sleepers on this train will go straight through and reach Detroit Monday morning.

A delightfully refreshing ride over Lake Erie is in store for all who can use the Detroit and Cleveland Navigation Company's boat out of Buffalo either Saturday night, Sunday night or Monday night. One way fare, $3.50; round trip, $6.50; upper berths, $1; lower berths, $1.50; state room, accommodating three persons, $2.50. Meals served on boat.

We should all sacrifice some little degree of comfort, if need be, in order to secure this distinction. The osteopathic profession has been counted as clannish, pulling together and appreciative of favors shown them and recognition extended. Is that spirit dying out? Maybe the result of the efforts of the Transportation Committee to draw them together on this trip will prove it still exists.

Program of the Sixteenth Annual Meeting
of the
AMERICAN OSTEOPATHIC ASSOCIATION
to be held at
Hotel Pontchartain, Detroit, July 29-August 2, 1912

Monday, July 29

10.00 State Meetings.
8.00 p. m. General Reception and Annual Ball.

Tuesday, July 30

9.30 Invocation.
Address of Welcome.
President's Address ..... DR. JAMES L. HOLLOWAY
10.30 Osteopathy vs. Drug Therapy ..... DR. C. B. ATZEN
11.00 The Inherent Weakness and Developed Deformity of Every Man's Spine, DR. EARLE S. WILLARD
11.30 Report of Publication and Education Committees.

CLINICS

2.00 Diseases of the Heart ..... DR. J. IVAN DUFUR
2.40 Treatment ..... DR. EUGENE LINK
3.00 Diseases of the Lungs ..... DR. T. J. RUDDY
3.40 Treatment ..... DR. A. C. WILLIAMS
4.00 Round Table—Acute Practice. Moderator ..... DR. LESLIE KEYES
Leaders.... DR. A. D. BECKER, DR. J. S. BACH, DR. DELLA B. CALDWELL

Wednesday, July 31

9.00 Mechanical Principles of the Human Body ..... DR. R. K. SMITH
9.30 Mechanical Changes Incident to Puberty ..... DR. G. W. BUMPUS
10.00 Osteopathic Examinations on Public School Children. (Benefits and Possibilities) ..... DR. W. D. DOBSON
10.30 Relation of Osteopathy to Social Problems ..... DR. J. W. JONES
11.00 Report of the A. T. Still Research Institute.

CLINICS

2.00 Diseases of the Stomach ..... DR. GEORGE LAUGHLIN
2.40 Treatment ..... DR. A. B. CLARKE
3.00 Diseases of the Liver ..... DR. D. S. B. PENNOCK
3.40 Treatment ..... DR. HARRISON MCMAINS
4.00 Eye, Ear, Nose and Throat Section. (Program given below.)

Thursday, August 1

9.00 Border-line Cases Between Osteopathy and Surgery.....DR. S. L. TAYLOR
9.30 Treatment of Rigid Lateral Curvature of the Spine, (With Demonstration of Abbott Method).....DR. OTIS F. AKIN
10.00 Report Legislative Committee. .....DR. D. L. CLARK
Report on National Legislation. .....DR. O. J. SNYDER
Address on Legislation.....DR. ASA WILLARD
12.00 Election of Officers.

CLINICS

3.00 Diseases of the Blood.....DR. C. A. WHITING
3.40 Treatment .....DR. R. D. EMERY
4.00 Round Table—Pediatrics. Moderator.....DR. M. L. SIMS
Leader .....DR. M. A. HAWKE

Friday, August 2

9.00 Vaccination from an Osteopathic Viewpoint.....DR. J. DEASON
9.30 Demonstration of Exercises Accessory to Treatment....DR. WM. S. NICHOL
10.00 Care and Treatment of the Pregnant Woman.....DR. E. R. PROCTOR
10.30 Routine Examination of the Nervous System.....DR. H. W. FORBES
11.00 Osteopathic Conception of Arthritis.....DR. K. L. ACHORN
11.30 Pathology of Joints (with micrographs).....DR. G. W. BURNS
1.30 Open Parliament—Need and Means of Strengthing our Organizations.
2.00 Indications for Surgical Interference in Gynecology...DR. J. B. LITTLEJOHN
2.30 Uterine Mal-positions. Diagnosis and Treatment.....DR. ORELLA LOCKE
3.00 Gall-stones. Treatment and Experience.....DR. R. W. CONNER
3.30 Main Points of Weakness of the Profession. (A constructive criticism) .....DR. GEORGE STILL
6.30 Annual Dinner, at Hotel Pontchartrain.

Eye, Ear, Nose and Throat Section—C. C. Reid, Chairman

(a) Examination and Diagnosis of Diseases of the Eye, Chas. C. Reid.

(b) Examination and Diagnosis of Diseases of the Ear, M. M. Ring.

(c) Examination and Diagnosis of Diseases of the Nose and Throat, T. J. Ruddy.

Exact Methods of Diagnosis and Treatment in Diseases of the Eye. R. H. Emery.

Instruments Used in Eye Work. S. M. Hunter.

Results of investigations the past year by osteopathic treatment of the ear, nose and throat. Mary S. Crosswell.

Treatment of Nasal obstruction by the osteopathic physician. A. H. Hall.

(Courtesy Hotel Booklet Co., N. Y.)

The Journal of The American Osteopathic Association

Published by the American Osteopathic Association
247 Fifth Ave., New York N. Y.

Subscription Price, Five Dollars Per Annum, in Advance

COMMITTEE ON PUBLICATION:

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H. L. CHILES, Editor

Editor's Mail Address, 462 Main Street, Orange. N. J.

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The Endowment Fund

In this issue of the JOURNAL is a list of the names and amounts of the contributors to the fund from its beginning to June 30th, 1912. It will be understood that only the first subscriptions, those made at Put-in-Bay, have matured the five-year period. The subscriptions made at Kirksville will mature in December next. So most of these amounts are partial payments on what the record will finally show to the credit of these subscribers. But comparison will show a shrinkage from the lists of subscriptions published during the last five years. Some shrinkage was inevitable and some shown here will be wiped out, payment having been only postponed. But the final shrinkage will be larger than it should be, and its explanation rests with those responsible for it. Several of those who have paid out have renewed for another five years. One new subscription of $1,000 was received.

The plan presented to the profession a year ago, of each member securing at least $100, first suggested by Dr. Harry Still, did not work out as hoped for, so far as getting small amounts was concerned. Something in the relation of physician and patient precluded successful solicitation for funds by the physician, as a general thing. In exceptional instances, currents have been started, leading to negotiations which will ultimately bring returns, and from this aspect the plan was abundantly justified. In fact, its educational effect was enough to justify it.

Dr. Booth suggested the one-dollar-a-month plan as a means of reaching every member of the profession. Some were ready to begin paying at once, as the list shows. Over 500 have said they will begin within a year. Within two years 5,000 members should be contributors. This plan is intended to be a continuous proposition. Every six months a reminder will be sent to each member of the profession urging the forwarding of semi-annual instalment.

From time to time individuals will be compelled to drop out. Others will come into line. So from year to year the profession will keep it going. As will be seen, the plan is of indefinite duration. It should last until we get an endowment large enough to do the work we want done. One dollar a month is suggested as the minimum. Those who are able should pay more. If 5,000 members

would contribute a total average of $200, we would have our million. The larger the semi-annual instalments, the sooner we will get into full swing in this enterprise, and the sooner our efforts will be supplemented from sources outside our own ranks.

The correspondence from the profession on this plan is inspiring. While there have been a few letters of which the writers will sometime be ashamed, the great majority of them show a deep and widespread interest in this movement and desire for its success. As one man put it, "Count me in, and if things go as I expect, I will make a dollar a month look like thirty cents' worth of dog biscuits. The Lord knows I would fork over the whole million if I had it." The general spirit shown by a thousand letters goes a long way toward insuring success.

The Chicago committee is developing its plans for getting the ground and building. The Chicago, and Illinois state, societies are planning to sidetrack everything else for the coming year, such as legislation, or anything calling for money, and concentrate all their energies on this one thing. How are the rest of us going to meet that spirit? If they furnish the building, we must furnish the money to run it.

A number of the letters have criticised in a more or less intelligent way the character of the proposed institution. That we need a post graduate more than a research institute, that our chief need is a great hospital to which all the profession can come for practical work, that it is a mistake to confine investigation to bony lesions, instead of studying "diet and other questions," were among the suggestions offered.

If these critics will refer to the booklet issued over a year ago, they will see that all these things are contemplated in the plans for the Institute. The program as given in that booklet comprises five heads:

"First: To provide for laboratory research and investigation into the conditions of health and its maintenance, the causes of disease, and its cure." This will cover every possible question that any one of the six thousand practicing osteopaths can conjure up and suggest for investigation. The reader can supply details to his heart's content without getting beyond the limits of this clause.

"Second: To provide hospital facilities for the exhaustive and scientific study of disease." This means just what is says, and would require beyond complete hospital equipment in the ordinary sense, the additional special equipment necessary to clinical research.

"Third: To provide opportunity for osteopathic physicians who may desire to pursue special lines of hospital and laboratory investigation and training." The Institute should offer every inducement to any osteopath with a new idea to come to its laboratories and work out his idea to a practical form. It should provide for those who want to get advanced and special laboratory training, supplemented by systematic courses of lectures and instruction.

"Fourth: To provide for the dessemination of the results of these investigations, by means of pamphlets, bulletins, monographs, lectures, and other means, and for the publication of osteopathic books and scientific works as the profession may need." The publication department should write, compile, edit, and publish everything in the way of scientific literature that can be of use to the profession. It should publish popular literature designated to educate the public, and it should maintain a press bureau to supply articles on osteopathy to the public press.

"Fifth: To unify the work of research and investigation throughout the profes-

sion by promoting co-operation in such work by individuals, associations, and colleges wherever practicable, so far as will conduce to the highest effectiveness, and the maximum of results." The colleges would logically be co-ordinated with the Institute in many lines of research. They would profit in their class instruction by advance information of developments in the work of the Institute. Science circles, associations, and societies, will all find frequent occasion for co-operation with the Institute. The gathering of statistics of all kinds, the relation of osteopathy to social betterment work, the study of diseases incident to school life, the preventive treatment of children, occupation diseases, and a multitude of other questions could be worked out and methods perfected by which the profession could be enabled to take its rightful place in relation to public health.

The keynote of the Institute should be Service. Service to the colleges. Service to societies. Service to the individual members of the profession. Properly endowed, considerations of profit would be eliminated. Co-operation with colleges and organizations should involve no cost to them. Books, pamphlets, literature of all kinds, should be distributed to the profession at cost, including compensation to authors and publishing. Attendance of members of the profession in the Institute should be without any tuition fee. The Institute should exist for the profession.

We can make a beginning on this if it means only one man in two or three rented rooms, and from that it can grow. To provide for this maximum of all the activities here indicated, the Institute should finally have six or seven buildings and an endowment of five million dollars for maintaining the work to be done in them. That will come if we do our part.

C. M. TURNER HULETT, D. O.
CLEVELAND, OHIO.

The Needs of the Time

What does the osteopathic profession hope to accomplish by the establishment of the Research Institute, is a question often asked, not only by the laity, but also by osteopathic practitioners who have not as yet felt the pressing personal need for the perpetuation of our theories.

This question cannot be satisfactorily answered at this early date, as no one knows what future efforts will reveal, nor what hidden secrets may become known that will influence our efforts; but some answer to the above question can be made even at this early date. We can by research prove our primary contention, that the osteopathic lesion is a demonstrable cause of disease, that it is a cause for lowering cellular tone, making infection possible where otherwise immunity existed. It will help to remove from the minds of the people the superstitious beliefs which are now prevalent with respect to disease, and substitute therefor rational beliefs, the result of investigation, for there is no theory of disease more rational than the osteopathic, which emphasizes that perverted anatomy is the key to the situation. But because this concept is so little understood by the rank and file of our people, even the practitioners are often swept off of their feet by adverse criticism.

It requires no little mental and moral strength, even at this day and age, when we often pride ourselves that osteopathy is firmly established in our land, to unflinchingly meet the sarcasm expressed by those unfriendly to our cause. The research Institute is the one institution which is organized for the purpose of giving you this desirable, proven experimental knowledge, with which you can meet the sarcasm of our enemies with a calm mind and a conviction backed up by experimental investigation, where our theories have been put to the test of im-

partial investigation. This is the last necessary step that we, as a distinct school, must meet, making a backward step impossible, and showing our confidence in our theories by a willingness to abide by what the search reveals.

When our theoretical and clinical work has been reinforced by experimental research, and the work as a whole is shown to be compatible with other known scientific data, we can serenely face the future with a firm conviction that our school and profession will live and thrive, and that we have had a hand in the changing of the world's thoughts. It is this changing of the world's thought that is so difficult, for inherently the world is conservative and dislikes to have modifying conditions forced upon it, and this conservatism coupled with established authority is the chief cause for the unfriendly criticism under which you so often suffer; but no one who is awake to the times can fail to see what a great modifying influence our philosophy has had on the world's thought in the past decade, and if the rank and file of our profession will only awake to the possibilities, which are within easy reach of our efforts, and support the research movement, so that we might bring forth the experimental proof to sustain our theoretical and clinical evidence, we can within the near future compel the scientific world to give due recognition to our claims, and establish our theories firmly in the thought of the world.

This accomplished, our most pressing troubles will have been mastered, and funds for further investigations will come to us with very little effort; but help from the outside will be slow in offering us assistance until we have placed our theories upon a firm scientific foundation by experimental work. This we must do without expecting much help from outside of our professional membership, and for that reason we need a more united co-operation of the personnel of our profession, where each and every one shows a willingness to sacrifice individual gain for the collective good. God speed the day, when this becomes a reality in fact.

C. B. ATZEN, D. O.

OMAHA, NEB.

The Claim of Research

The finance committee of the Research Institute makes no apologies for in effect demanding from each practicing osteopath a contribution of one dollar per month for its support. Support of the Research Institute should be a part of each one's fixed expenses—should be a sort of first lien on his prosperity.

The world cares little whether its needs are satisfied through one school of practice or another. If great discoveries have been made by a man who also founded a profession, that is no reason why the world should not avail itself of other means for advancing such a science, if the profession so founded does not advance it. This is one reason for such a determined attitude—because that which we take pride and profit in will be taken away from us if we do not do our moral duty towards it.

There is no dearth of reasons. But the great and effective reason should be in the osteopathic physician himself—in his character, his moral stamina, his *noblesse oblige*. If he has any nobleness in his nature, it should oblige him to make this contribution to still further improve that which is so freely given to him, and enables him to earn his living and support his family. It is not often in history that men have the opportunity to be in the forefront of so great a movement. In this case let a whole profession rise to the needs of the occasion, and not one be missing.

The coming convention should en-

deavor to declare, by the expressed feeling and united voice of all its members, the sentiment that everyone who earns money through the practice of osteopathy, should make his contribution towards the endowment fund. Each convention records some advance in the organization of the profession or in the progress of the science. Each convention should pick out the problem which at that moment is the biggest on its horizon and put all of its great pressure first on that problem.

Of the problems that are of most moment, the first is a Research fund; and the second (or perhaps it should be called the double-first!) is that of students, recruits, the drawing of the minds and the fingers that the world needs for its healing into our schools. Our schools hardly pay enough yet for us to take toward them the attitude that one might take toward a business—that of letting them shift for themselves. They are still, in a way, the wards of the profession, especially since it has assumed a dictatorship over their standards and methods; but whether they be so regarded or not, the fact is, nevertheless, that our greatest present need is bound up with their interests. Our chief need now is, and for the next several decades will be, new members for the profession. Selfishness nor school rivalry should not prevent our achieving a solidarity of feeling and patriotism, or, if you please, alma matriotism; a motive for effort, which, being shared by a thousand men, could not fail to achieve its result.

No less than one new student per year, and not less than one dollar per month, should be the spirit of this convention. If we make the *spirit* sufficiently clear and strong, it will carry itself out almost automatically, without injunction to effort.

E. E. TUCKER, D. O.

NEW YORK CITY.

How We Grow

Some people always expect the completion of a great work in an incredibly short time. If they have been suffering for years with a chronic ailment, they expect the osteopathic physician to cure them in a week or two, possible in one or two treatments. If he does not succeed osteopathy is a failure, according to their dictum, or at least in their cases.

Osteopathic physicians themselves are often given to making the same unwarranted criticism on the work going on in their own profession. They are generally innocent of any wrong intent. But they have not always been active in their efforts to discover the motives that have prompted those who have poured into their minds false motives.

The A. T. Still Research Institute has often been the victim of these misunderstandings and misrepresentations, but all of them have been answered by word of mouth, printed statements and practical work in a general way. We all know, at least in a general way, what it is doing to place itself on a permanent footing where it can be a visible, tangible force in helping every school, every osteopathic physician and every patient who depends upon osteopathy for his physical well being.

The research work of the Research Institute is a living force today whether we all know it and believe it or not. The report issued by it has been found to be the most solid argument yet produced to place before the man who wants to know why. Bald and blatant statements as to what osteopathy does and how it does it have disgusted many persons who would have become earnest disciples of osteopathy had a scientific presentation of the subject been made. Progress in this age is always toward a solid basis. This is true in education, in politics, in religion. The ephemeral may flourish as a plant growing in shallow soil; its roots do not reach an adequate supply of nourishment and it must wither and die.

Osteopathy has an inexhaustible supply

of truth on which to build. It must not only draw upon that supply, but it must know how and why it does it. "I guess," "I believe," "I think," will not count. Osteopathy is not based upon empiricism as is drug practice and almost all the procedures of the M. D. Its theories are unassailable by facts; its results are convincing. The mission of the Research Institute is to show the most critical, even out of the profession, and demonstrate its possibilities to those within its ranks.

Apropos to the last sentence above. The profession does not appreciate what our researchers have done by way of practical work. I know two cases where ladies have been saved from the knife because of the direct and positive findings of the Committee on Neoplasms of the Research Institute. Both were declared by the highest surgical authorities in Cincinnati to have cancers. An absolutely hopeless condition was assured within six months if not operated upon without delay. Several osteopaths concurred. Both the ladies are as sound as ever today and two of our best surgeons revised their opinions after each examined the case and acknowledged he could not find a trace of the tumor or any of its symptoms. Now, I don't say that osteopathy cures cancer, but I do say that results so far prove that it is one of our most fruitful fields for research.

E. R. BOOTH, D. O.

CINCINNATI, OHIO.

The Research Institute and Research

It is with pleasure that the JOURNAL gives over this issue to the A. T. Still Research Institute for the purpose of laying before the profession the results obtained by a few of its workers the past year and unfold more fully to the profession its plans for the future work. The year's work is not as complete as it would be, but for the fact that some of the workers had not time to complete their reports before this issue of the JOURNAL goes to press, and it was thought best to reserve the important work of several others in order that it might be first given at the Detroit meeting.

On the whole it has been a successful year for the Research Institute and for osteopathy. The experimentation and research will show satisfactory results. Likewise the spirit of research is growing and we shall have from this time on many more capable of doing research and more interested in the cause. As will be seen by the financial report presented in this issue, the profession is fairly beginning to support the movement. The evident necessity of doing this work is coming home to more and more of the profession. While perhaps few large contributions have been made within the last twelve months a great many have contributed on the dollar-a-month plan and by the time of the meeting several hundred others, perhaps a thousand, will have enrolled themselves in its support. True, $12 a year will not count up fast in an endowment fund, but it will count up fast in enlisting a large percentage of the profession in the cause of research. It will add materially to the morale and attitude of the profession toward the cause. And while money is desirable and must be had, the hearty support and interest of the whole profession is the essential for the success of the undertaking. Small sums from the entire profession will finance it and the thoroughly aroused interest of the entire profession will bring about ample funds for endowment from outside the profession.

While in a way it may seem a discordant note, the JOURNAL has no wish to choke off honest discussion, hence the following correspondence is presented to our readers:

ORANGE, N. J., June 20, 1912.

DR. WILFRED E. HARRIS,
CAMBRIDGE, MASS.

My Dear Dr. Harris:

I have been informed that at a recent meeting of the Alumni Association of the Massachusetts College that you urged those present to hesitate and think very carefully before contributing any money to the Research Institute fund as you believed and were willing to back up your belief with a gift that there

should be no Research Institute unless it was of a post-graduate college character and unless it granted the M. D. degree.

As editor of the JOURNAL, it will, perhaps, be my duty to mention this report and comment upon it in the coming issue, and wishing to be entirely fair to you, I am writing to know if the above statement represents you accurately or if you care to make any statement of your position or of the position you took before your alumni.

We shall have time to hear from you before saying anything in the JOURNAL if your reply to this is prompt. With sincere regards, I am,

Very truly yours, H. L. CHILES, D. O.

BOSTON, MASS, June 22, 1912.

My Dear Dr. Chiles:

Replying to your kind letter of the 20th inst., it is quite true that I chose the "Research Institute" as the subject of a brief address to the Alumni Association of the Massachusetts College of Osteopathy on the occasion of their annual banquet. I think it may be well for you to publish in the A. O. A. JOURNAL your letter of inquiry sent here, and then add my reply, so that neither of us will be misunderstood.

Because the best years of my life and the best efforts of which I am capable have been devoted to the teaching of the principles and practice of osteopathy—and (I believe I am to-day, in point of continuous service, the oldest teacher of this particular subject—I need hardly apologize for having publicly proclaimed my objections to the somewhat restricted purpose of the A. O. A. Research Fund.

The gist of my remarks may be summed up as follows, viz.:

(1) I expressed a hope that my hearers would not make further contributions to the Research Institute until the purposes of the fund should be broadened to meet more fully our dire educational needs.

(2) I suggested that the money subscribed should be devoted to the establishment of a large central hospital, which might be located in some large city—e. g., Chicago or St. Louis, as to best meet the convenience of those located in all parts of this country.

(3) That this hospital should belong to the whole osteopathic profession, and be maintained by the profession and friends for the benefit of patients and students alike.

(4) That research laboratory would be an essential feature of this large general hospital, in which might be carried on a line of helpful investigations with a view to elucidating the importance of that group of lesions which we designate osteopathic.

(5) I further suggested the practicability of conducting a post-graduate school in conjunction with the foregoing in order to afford much needed facilities for additional study on the part of those early graduates handicapped by a short course of instruction.

(6) In order to meet the wishes of those desiring to obtain the M. D. degree—as evidenced by the large number of our bright men who have already taken it or by those who we now enrolled among the classes of medical schools, I suggested the plan of giving the degree of Doctor of Medicine to those who should spend the required time in the P. G. School—say one or two years, according to whether their primary training had covered a period of two or three years.

I may say my last suggestion was made with the object of meeting the growing demand within our ranks for the rgular degree, in order to obtain which we are not allowed an hour of credit to the regular schools, but must sacrifice four full years spent in schools avowedly unfriendly to our own beloved principles. There is much more I might say in defense of these views, which space will not admit of at this moment; but I shall trust to your generosity to afford me an opportunity to amplify the same in the near future.

Yours most sincerely,

WILFRED E. HARRIS, D. O.

P. S.—In my address before the New York Society, entitled, "Our Educational Needs," which the JOURNAL failed to publish for me, and which was later published and circulated by "The Massachusetts Academy of Osteopathic Physicians," I set forth these same views, so I claim no novelty for the above.

Perhaps it is best to leave each reader to answer the points raised against the Institute by Dr. Harris as seems best to himself in connection with the statements and reports printed in this number. Our own individual answer would be something like this:

That we should contribute to the cause even if from our standpoint it is not ideal. No believer in osteopathy can take the position that the work done in behalf of the Research Institute is doing osteopathy any harm. It is doing it good. Whether it is doing it the most good, whether it is rendering it the particular service that I would prefer to see it render does not seem to me to justify withholding support. We, therefore, should contribute, become a part of the movement and then use our influence to convince the Council that the line of work that I would mark out is the most needed.

Second, is one hospital, though centrally located, the most practical thing for all those coming under the care of the profession scattered over this entire country and Canada? We should have a dozen such hospitals making one near enough so that it might be of some practical value. If organized as educational institutions must finally be organized, would not the alumni of the several colleges aid their alma mater in equipping proper hospitals? Will not the profession in all the largest cities in a short time have clinics which will grow into hospitals where bedside and surgical work may be done? Further than that, does not the plan and purpose of the A. T. Still Research Institute contemplate an institution wherein at least the training in hospital methods may be given?

Four, if the profession puts up the money, would not we see within a year just what Dr. Harris asks for in this proposition? In fact, without the money are not we seeing it? With the small encouragement which the income from the endowment fund permits, have we not had half a dozen or more workers the past year engaged in doing this very thing, not in the big institution, to be sure, but in the best facilities at their command, because not enough of us have paid to make this possible but as soon as the big institution is possible several workers, now in training for it, will be prepared to enter it and give their undivided time to the work they are so successfully doing under present handicaps. Is it not a fact that the osteopathic profession in Chicago and Illinois are making it their supreme effort the present year to contribute the buildings and grounds for this institution while the profession elsewhere seeks to assume the endowment?

Five and six open up questions which the individual must answer for himself. My personal answer would be that the Research Institute should not, and I am sure will not, do anything to cripple the schools or draw from their support. It should, and I am sure will, supplement their work — I add to their student body. It may provide the work wished by certain students and required by certain States in case the individual school should find it too expensive to do. There cannot possibly arise in the profession any division or schism on this proposition, the profession sees the situation clearly. We are all awake to two demands: That we educate the men and women who wish to become osteopathic physicians so that they may become the best osteopathic physicians possible; and that our schools are our hope for placing osteopathy upon a sound, enduring foundation. Nothing will shake the profession from this determination, but before we have either grounds or buildings or a fund that produces more than $2,500 a year, it appears to us to be ill advised to divide on the question of what part of the work now being done by the schools should be done by the Institute.

In regard to the M. D. degree proposition, so far as we have observed there has been no growth in favor of the sentiment since two years ago, when the profession expressed itself with decision and almost unanimity regarding it. So long as we have not the prophetic vision it seems best to us to decide questions only as they come up. I, for one, do not care to say that if I should live fifty years hence whether I would uphold or oppose the osteopath wearing the M. D. degree or taking a medical course; but I have no hesitancy in saying that at the present time I can see nothing to justify either. If we develop osteopathy within the next five or ten years we shall do well, with none of our interest diverted by medical degrees granted us. When we all study our cases closer and by properly kept records properly compiled and published each shall have the results of the other's experience; when we have had in addition to this the results of the studies in physiologic and pathologic processes now being gained through animal experimentation, we shall perhaps have demonstrated to ourselves the field in which osteopathy is most successful, the

technique of its application, as well as learned the field in which other methods seem to secure better results, if such should be demonstrated to be the case. In the meanwhile independent workers in the other schools of medicine and those working along the lines of the so-called natural therapeutics are coming toward us, and within a few years the whole field of medical practice may be changed, for now it is rapidly changing.

When we have done our part to develop osteopathy and the others have done their part to develop the system in which they are working we shall be in a position to decide what we need and whether or not we want our own institutions teaching medicine and granting the M. D. degree. When we have developed our own we shall not be afraid of truth. But in the therapeutic world today the question constantly recurs, "What is truth?" What was hailed as truth yesterday is discarded as fallacy today. The institution should be founded and the necessary structure built with an open mind and uncommitted to any proposition which is not demanding to be solved. We must trust one another; we must trust the future, for wisdom will not die with you and me. Five years hence or twenty-five years hence the profession will meet its problems even as intelligently and fearlessly as now. Let us not divide on these problems now. Let us not seek to safeguard nor lay down the lines for those who come after us or for ourselves years hence. Let us with united support secure the building and start the endowment fund that will serve to aid in solving our problems and where the problems of every year and of every generation may be worked out.

If each shall make the adoption of his idea a condition to giving support, we shall not get very far.

On Ousting Parents

A remarkable case has recently come up in Philadelphia in which the "Society to Protect Children from Cruelty" desired to be appointed as the legal guardian of a seven-year-old boy because his parents were unwilling to submit the child to certain operations which the agents of the society wished the child submitted to. One would almost think that the Spartan days, when the theory flourished that the children belonged to the state, had returned, from the activity of many of these so-called charity organizations.

The parents of this boy had objected to an operation for ricketts which the organization's surgeons claimed would cure the condition, which was one of extreme bow legs. The parents looked upon it as experimental and declined to submit the child to the operation. It seems that the school which the child attended had notified the society, and as it could not induce the child's parents to have the child operated upon, they appealed to the court to appoint the society guardian for the child, so that it might give its consent to the operation.

The judge, in dismissing the case, gives what appears to be a very wholesome statement of the conditions. He says that the fact that the parents will not submit the child to operation for a deformity which is not painful and which does not shorten life, although the operation might increase the child's usefulness and ability to earn a livelihood, does not constitute cruelty to the child and that the parents do not forfeit their natural right to guardianship because they exercise their judgment as to whether they will submit or not to the desired operation. He further enumerates that many die, even from supposed simple and slight operations, and that in view of this the court is not justified in assuming the appointment of a guardian in order that the operation may be tried. In reply to the statement that the operation is usually successful, he says: "The law of average, however, is of no benefit to the exceptional individual who succumbs. For him there is no longer a percentage of chances. His loss is total. It is this contingency which every adult person weighs whenever a serious operation is to be performed and no one has ever questioned his legal right

to decide the question for himself. When, however, infants are concerned, the choice must be exercised by their guardians. * * * Having regard to all these considerations and to the fact that the child's present condition involves no danger to its life and that even if uncured he is still capable of a reasonable amount of activity in all ordinary affairs we do not think that this is a case in which we can displace the natural guardians on the ground of cruelty."

A day or two later the Philadelphia physicians discussed this decision of Judge Sulzberger pro and con. We quote from two. Dr. S. Solis-Cohen: "A contrary decision would have stood for nothing more or less than tyranny. * * * There is another phase of the subject. What is regarded as high science one day frequently turns out to be ignorance the next." Dr. Spitzka, the well-known brain specialist, is a strong believer in putting out of the way all who are below the average. The only trouble he sees in deciding these questions is to find the judges capable of passing on them.

But those who fall into the hands of the medical authorities of the United States Navy are not, however, so fortunate. Recently an enlisted seaman from Tennessee, name McDermitt, upon court martial was given a year in the penitentiary and dishonorable discharge from the service for refusing to submit to vaccination. The National League for Medical Freedom recently investigated this and one or two other similar cases and finds that they are practically impossible to get at. The Judge Advocate General of the Navy, says that hundreds of such cases come before him for review, and, of course, many more never get that far. The decision in one of these cases can only be questioned through the courts on a *habeas corpus* writ and capable attorneys have expressed the opinion that it is a very expensive procedure, slow and doubtful as to whether the courts would entertain it.

A case is recorded where a captain was ordered to submit to an operation for appendicitis. He refused, but on court martial was compelled to submit. The operation was not successful in that he did not feel so well after the operation as had been expected, consequently he was ordered to submit to a second operation. He refused and appealed, and this time the Judge Advocate General excused him from submitting to the second operation.

There seems to be little doubt, if one may judge from the facts that leak out but what the army and navy are absolutely dominated by the rankest experimentalism. It is reported that all the force, which we understand includes the officers, oppose compulsory vaccine treatment, except the surgeons. Either the surgeons are using their opportunities for personal purposes to become as skilled as possible in all forms of advanced treatment and are using those who come under their control as subjects for the same, or they are taking advantage of their opportunities as a part of the general proposition to see what certain forms of treatment and certain operations will do and are using the soldiers and sailors of their country much as experimenters outside use dogs and guinea pigs.

The JOURNAL represents the osteopathic school of practice, which has no fight to make against the advancement in the practice of medicine and surgery, and the osteopathic school of practice has up to this time contented itself fairly consistently with attending to its own business; but these facts seem to illustrate the use that is made of power when one school of medicine is not checked and watched by another school of practice, and coming in possession of these facts, it seems to be our duty to give them to the profession that they may be passed on to the public. It is hardly to be thought that many young men would surrender their bodies as all, it appears, must do who enter the army and navy, if they knew at the time of enlistment that they were doing so, nor is it probable that the public has reached that stage when it wishes its

citizens to surrender to much needlessly as a condition to entering the service.

Now for the Detroit Meeting

The JOURNAL embraces this final opportunity to again call the attention of the membership to the most excellent program and the splendid attractions and opportunities for a vacation which the Detroit meeting offers.

Every indication is that the attendance will be large. It should be a record-breaker. It will be if the osteopathic profession is not indulging the false hope that it has secured its place as a school of medical practice. This is by no means the case. We have a score of States yet which need competent legislation. Any one or all of the score of States which are now enjoying adequate legislation may have it snatched from them, and it will be snatched from them unless we are alive and show a united front. The presence of one hundred or two osteopathic physicians in the State does not guarantee them a consideration at the hands of the Legislature. It depends on how alive they are to their interests and how much support can be shown from the citizenship of the State. We have several most important internal problems to solve.

Enthusiasm for osteopathy, as evidenced by the attendance at its meetings is the one guarantee of success. What we gained earlier we gained from being enthusiastic and determined. What we have lost latterly has come about from each being interested in his own personal concern and forgetting the common cause. It is the common cause that counts. Self-interest will get us nowhere.

The attendance at Detroit will prove whether we are interested in the common good or whether self-interest has a death grip upon us.

Officers to be Elected

With the informal ballot in operation, as provided by the By-laws, it is necessary that the membership consider in advance the officers that it would choose for the coming year. The residence of the officers for the present year and in recent years might be taken into consideration. The Presidents for the past four years have been located as follows: Thomas L. Ray, Texas; E. C. Pickler, Minnesota; A. G. Hildreth, Missouri; James L. Holloway, Texas.

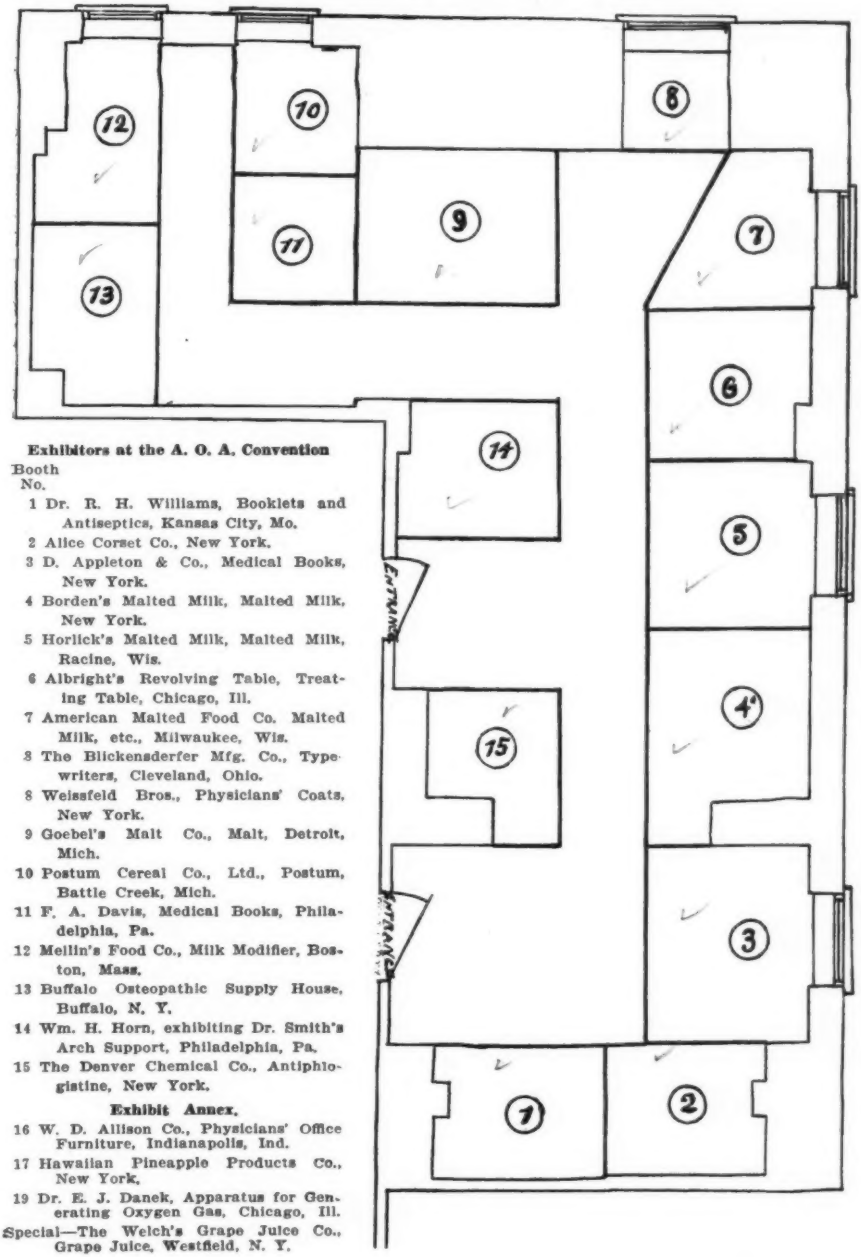
The Trustees whose terms expire this year are, Norman B. Atty, Massachusetts; James S. Bach, Toronto, Ontario; Lena Creswell, California; Frank R. Heine, Pennsylvania; R. B. Henderson, Ontario. The following states are represented on the Board by members whose terms hold over for one or two years: Oregon, by Gertrude L. Gates; Colorado, by G. W. Perrin; Minnesota, by E. G. Pickler and C. A. Upton; Indiana, by O. E. Smith; California, by Effie E. York; Pennsylvania, by E. M. Downing; Illinois, by H. H. Fryette and E. R. Proctor; Missouri, by A. G. Hildreth.

The Board of Trustees is a most important body, as it appoints all of the standing committees and has practically entire charge of the affairs of the Association, except when the Association is in session. It is, therefore, desirable that the membership not only give attention to the geographical distribution of its Board of Trustees, but consider carefully the personnel of the membership and select capable, earnest and active men and women to fill these places.

The Place for the Next Meeting

While the By-laws of the Association put the selection of the place of meeting in the hands of the Board of Trustees, this is largely so to prevent time-consuming discussion in the selection of a place and also to provide for change in case the place selected may for some reason become undesirable between the time the selection is made and the time of holding the meeting. The Board invites an expression of the wishes of the members.

Diagram of Exhibit spaces and List of Patrons



Exhibitors at the A. O. A. Convention

Booth No.

1 Dr. R. H. Williams, Booklets and Antiseptics, Kansas City, Mo.
2 Alice Corset Co., New York.
3 D. Appleton & Co., Medical Books, New York.
4 Borden's Malted Milk, Malted Milk, New York.
5 Horlick's Malted Milk, Malted Milk, Racine, Wis.
6 Albright's Revolving Table, Treating Table, Chicago, Ill.
7 American Malted Food Co. Malted Milk, etc., Milwaukee, Wis.
8 The Blickensderfer Mfg. Co., Typewriters, Cleveland, Ohio.
8 Weissfeld Bros., Physicians' Coats, New York.
9 Goebel's Malt Co., Malt, Detroit, Mich.
10 Postum Cereal Co., Ltd., Postum, Battle Creek, Mich.
11 F. A. Davis, Medical Books, Philadelphia, Pa.
12 Mellin's Food Co., Milk Modifier, Boston, Mass.
13 Buffalo Osteopathic Supply House, Buffalo, N. Y.
14 Wm. H. Horn, exhibiting Dr. Smith's Arch Support, Philadelphia, Pa.
15 The Denver Chemical Co., Antiphlogistine, New York.

Exhibit Annex.

16 W. D. Allison Co., Physicians' Office Furniture, Indianapolis, Ind.
17 Hawaiian Pineapple Products Co., New York.
19 Dr. E. J. Danek, Apparatus for Generating Oxygen Gas, Chicago, Ill.

Special—The Welch's Grape Juice Co., Grape Juice, Westfield, N. Y.

Personal Hygiene

ORREN E. SMITH, D. O., *Editor*, INDIANAPOLIS, IND.

VI.

Hygiene of the body may be perceptibly modified by afferent impulses, aroused by muscular contraction, created by either physical or mental labor.

Both physical and mental action requires muscular contraction in their production, and during this state of contraction, the muscles undergo many changes, which react upon the sensory nerves contained in the muscles, and thus modify afferent impulses, which eventually disturb function profoundly. These changes in the muscles, during contraction, are chemical, physical, physiological and pathological, and they are also closely related and merge so imperceptibly into each other that it is difficult to differentiate between the normal and abnormal states.

During muscular contraction, the muscles require oxygen to maintain metabolism in them. Oxygen seems to constitute the activating principle in chemical reactions, and furnishes to the muscles the power to liberate energy in the form of heat, motion, etc. During contraction the muscles receive a much larger quantity of oxygen through the circulation than in their resting state, and if the circulation carries chemical reaction, will be completed so perfectly that few end products of metabolism will remain to poison the local muscle cells, and nervous system.

Nature makes provision for supplying this extra quantity of oxygen required by the acting muscles, by increasing the number of respirations per minute, increasing the heart pulsations and thus insuring a greater aeration of the blood by oxygen. The rate of respiration may be increased from 18 to 120 per minute during excessive exercise. Lack of oxygen halts metabolism and in this way suppresses vital phenomena.

The amount of glycogen stored in the muscles is depleted very rapidly during muscular action. This substance is stored in the muscle as fuel to be used during muscular action and acts as a sort of energy to become available on demand. During muscular action the supply may be entirely exhausted and yet muscular action continue, owing to the fact that so long as the organism has sugar in other tissues, the muscles will draw upon this store and thus supply enough for muscular action. Even in greatly emaciated persons, glycogen is still produced as the organism has power, it is thought, to convert proteids and fats into carbohydrates. It seems to be a fact that glycogen is one of the necessities for muscular contraction and that, as the store in the muscle is depleted by contraction, the other sources of supply in other tissues, are drawn upon to continue the muscular contraction. It will be seen from this fact that muscular action carried to excess will not only deplete its own store of energy, but that other tissues of the body may be made to give up their store of energy to the muscles and in this way lower vitality and functioning power in other organic parts of the body. The harm resulting from overwork does not confine itself to the emaciation of the skeletal muscles, but visceral organs are involved also by robbing them of their normal supply of nutrient material. In this way secretory and excretory functions become weakened and thus derange metabolism.

During muscular contraction, a number of waste products arise as a result of muscular functioning. Lactic acid is one of the waste products and begins to form as soon as the muscle begins to contract. The muscle during its passive state is neutral or slightly alkaline, and the blood is also alkaline. But the blood washing through the contracting muscle, neutralizes the acidity of the muscle created by the constantly arising lactic acid, and carries the excess of acid to the liver where it is excreted, or this acid may be farther oxidized and used by the organism in some other way. Excessive muscular action causes a decreased alkalinity of the blood from the excess of lactic acid formed during muscular contraction, and in so doing, modifies the vital potency of the blood stream. Lactic acid may be formed from oxidation of the glycogen in the muscle. Creatin is the chief end product of nitrogenous substances.

Oliver states that "after laborious exercise the urine often contains, if not immediately, then later on, more urea, more uric acid and other acid products, as well as excess of chloride of sodium; whereas, after brain work, the urine is richer in sulphates and phosphates. Over-fatigue, as already mentioned, adds acid substances to the blood and reduces the resistances of the human body to disease."

Carbon dioxide is another waste product of muscular contraction. It is found that a person at work exhales almost twice as much carbon dioxide in twenty-four hours as a person not working. This gas is one of the last products of metabolism, and is poisonous to the organism when retained. Burge estimates that from twenty to fifty per cent. of

the gases formed in the intestines is carbon dioxide, and states that this gas is taken up by the blood and expelled from the system through the lungs.

This gas produces a narcotic effect upon protoplasm, and it can readily be seen that such being the case when this gas is not exhaled as it should be, the patient will show signs of stupor and lethargy. This narcotizing influence of carbon dioxide has a paralyzing influence upon the nervous system and has a tendency to suppress afferent impulses in the common sensory nerves, thus inhibition of function aries by loss of normal afferent impulses.

A. Mosso, professor of physiology in the University of Turin, who has made a very careful study of fatigue, says of muscular contraction:

"Too strong a contraction or excessive work will keep the muscles from relaxing completely, and to this condition of abnormal muscular tension the name of *contracture* has been given. * * * If a muscle is fatigued and the circulation of the blood in it is then obstructed, contracture appears at once. Contracture, as it presents itself physiologically is, therefore, the beginning of a pathological phenomenon."

Professor Mosso has stated the facts most accurately and concisely, when he says, "Too strong a contraction or excessive work will keep the muscles from relaxing completely," etc., because, until the muscle is overworked, i. e., worked too long without rest or worked for a short time beyond its strength, muscular contraction is physiological and of the greatest benefit to the organism. Pathological contraction does not begin until the capacity of the muscle for contraction is exceeded, then the mechanism of the muscle begins to give way.

Some physiologists liken muscular contracture to rigor mortis, and this comparison is not inapt, because in both rigor mortis and muscular contracture or continuous contracture of the muscle, there is coagulation of the muscle protoplasm. This continuous stiffening or hardening of the muscle, due to chemical reaction, brought on by exhaustive work, acts as a constant irritant, both chemical and mechanical, to nerve fibres distributed to and through the muscles, and modifies the normal afferent impulses to such an extent as to disturb function exceedingly. If the muscular system, either voluntary or involuntary, does not relax completely between hours of work, a condition begins to arise in the muscles which is cumulative from day to day and which disturbs function only an insignificant amount at first, but which eventually produces the most complex of symptoms and destroys the organic mechanism of the body. We cannot ignore the the health of the muscles if we are to have sound bodies, because through the nervous system the pathology of muscular tissue may be manifested in regions of the body remote from the local muscular lesion of contraction and there set up a secondary pathology, and this secondary pathology may arise in any one of the many bodily tissues governed through the nervous system, and hence disturb an infinite number of functions.

A striking illustration of muscular contracture which resulted from overwork, came under the writer's notice within the past year. The woman was a housekeeper and did her own work for her husband and two children. On examination, her spinal muscles were found to be in a state of continuous contraction from occiput to occyx, and although these skeletal muscles are, when in normal condition, voluntary muscles, and hence under the control of the will, yet this patient was unable to relax as she rested on the treating table, nor was she able to relax properly until she had been treated several weeks. She was extremely nervous and would have crying spells in which she was unable to control her emotions. She had terrific headaches, which were increased at the time of menstruation. The left ovary was badly congested and there was intense sciatica in the left limb. She was constipated and had spells of vertigo. After passive relaxation of the muscular contractures was obtained, the patient regained the normal voluntary or active relaxing power over her muscles that had been lost to her for a time, and with the passing of the muscular contractures, recovery of normal functions in all parts of the body was restored.

Personal hygiene is closely associated with muscular contraction because the number of afferent impulses created in the working muscle is modified not only by chemical, but also by mechanical conditions of the muscle, and such modification influences vital phenomena profoundly.

To indicate such use of the muscle as will conform to the laws of health in the muscle, and thus insure health to the individual, is as great service to mankind as to inform him of how to avoid infectious and contagious diseases.

Personal hygiene is preventive medicine, whether the disease prevented be gastritis or measles, and any disease is best prevented by dealing first hand with its cause, which in many cases has its rise in muscular contracture, brought on by excessive and unreasonable muscular action.

Subscribers to the Endowment Fund

List of subscriptions paid to June 29, 1912

Guy E. Loudon—First money raised brought to Put-in-Bay, starting the movement, $907.

Achorn, Ada, A. and K. L., $500; Akin, Mabel $5; Akin, Otis, $5; Alpin, Anna K., $75; Arnold, G. E., $75; Ashmore, Edythe, $100; Atty, Norman B., $50; Atzen, C. B., $450.

Baldwin, Helen M., $100; Banker, J. B., $120; Bass, E. C., $60; Bates, F. A., $40; Bathrick, Rosa, $40; Baughman, J. S., and Nannie B., $100; Beall, F. J., $400; Bean, Willard C., $20; Bechtel, J. R., $25; Becker, John D., $25; Benedict, A. M., $50; Bennett, C. A., $20; Benson, Lester R., $40; Bernard, H. E., $450; Berry, A. E., $20; Berry, C. D., $160; Bissonette, I., $200; Bolles, N. H., $80; Booth, E. R., $300; Bowen, M. E., $60; Bower, J. H., $40; Bowersox, U. S. G., $40; Breed, A. M., $80; Breitenstein, R. E., $40; Brock, W. W., $75; Brunner, M. W., $35; Buddecke, B. A., $65; Bullard, J. R., $100; Bullas, G. E., $105; Bumpus, J., $30; Bumpus & Bumpus, $15; Bunting, H. S., $75; Burns, Guy W., $25; Bush, Ida E., $20; Buster, Will I., $40; Byars, W. R., $40; Byrkit, Francis and A. M., $300.

Cain, P. R. and M. E., $100; Carlow, F. G. and E. N., $40; Carter, B. E., $8; Cave, F. and E. S., $100; Central College of Osteopathy, $300; Chaffee, L. Prater, $50; Childs, Bessie C., $5; Clark, D. L., $400; Clark, E. Heath, $5; Clark, J. C., $25; Classen, W. G., $30; Cloud, A. W., $20; Chiles, H. L., $25; Collier, J. E., $100; Collyer, F. A. and Lillie M., $80; Conner, Mary A., $100; Cook, W. J., $125; Corkwell, F. E., $25; Cosner, E. H., $60; Cota, Rose, $5; Covey, F. A., $500; Crawford, N. C. and H. T., $40; Creswell, Lena, $125; Crow, E. C. and E. M., $200; Curl, Loretta I. and L. F., $25; Cutler, Lynn, $25.

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McBrownlee, Annie, $5; MacCarthy, Mrs. F. H., $60; McCartney, L. H., $100; McConnell, C. P., $500; McConnell, W. A., $250; McDaniel, A. C., $40; McDougall, Jesse R., $185; McDowell, J. H., $80; MacGinnis, J. C., $100; McGuire, Frank J., $125; McLaughlin, S. C., $240; McLennan, Margaret, $20; McMilliam, J. C., $25; McWilliams, A.

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Underwood, E. K., $250.

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York, Effie E., $90; Young, C. W., $225.

The following have paid $6 each on the $1 a month plan: L. R. Bolan, Sears & Sears, Charles L. Severy, Bertha A. Buddecke, A. D. Becker, Thomas H. Spence, S. B. Barton, E. C. Link, Mada Oliver, H. G. Rolf, M. E. Garrett, James Edwards, Reginald Platt, J. E. Gibbons, Ethel Brittain, C. G. Luft, C. M. Proctor, Bertha M. Gates, Nellie A. Allen, J. E. Smith, Nellie O. Lundquist, W. B. Mitchell, Elizabeth Ayers, J. Falkner, Arthur M. Herman, Gilman A. Wheeler, Alice R. Shibley, Delia K. Stevens, W. O. Pool, William Craig, Ethel K. Traver, Charles W. Kingsbury, R. C. Dugan, William L. Rogers, Anna H. McGavock, J. H. B. Scott, Elizabeth Sash, Harry C. Osborne, M. W. Brunner, J. H. Maxfield, E. T. McLaughlin, A. M. Bruce, Cornelia A. Walker, Laura Nicholson, J. O. Hunt, A. M. Werkheiser, C. A. Upton, J. Y. Ernst, K. Williams, F. M. King, F. M. Vaughn, W. Rhodes, A. M. Oswalt, Isabel Abild, Minnie P. Riley, Alice Hughes, E. J. Kampf, B. A. Riley, C. N. Sigler, J. F. Wood, Clara B. Hardy, Peter J. Wright, Richard L. Meyer, P. F. Kani, W. E. Scott, J. S. Blair, F. E. Smith, Anna A. Smith, E. W. Cadwell, E. R. Larter, Irving Colby, George E. Smith, H. E. Sinden, H. Dorrance, Caroline I. Griffin, C. O. Goodpasture, W. A. Merkeley, Mabel A. Langley, Fred W. Morris, John C. Herman, George W. McPherson, J. Schuster, E. W. Herring, Morris W. Brill, R. V. Kennedy, C. De G. McKinney, G. W. Bumpus, Charles D. Flannagan, Lizzie E. Osgood, Lottie C. Barbee, George W. Wenig, Arthur S. Hollis, L. Ludlow Haight, W. C. Hall, Alice A. Robinson, T. P. Huffman, F. W. Treshman, E. C. Murphey, Verna B. Murphey, Edna M. Apthorpe, Elvire Tracy, Eliza Edwards, Arlowyne Orr, E. C. Galsgie, Bertha E. Sawyer, C. G. Wheeler, J. T. Volkman, J. M. Moss, Jessie H. Farwell, Kathryn Rutter, J. Taylor Watson, Henry A. Whitefield, J. H. Friend, J. E. Baker, Charles D. Camp, Z. A. Nevius, G. V. Webster, Ward C. Bryant, T. P. Weir, A. S. Dowler, Frances Saunders, Anna K. Stryker, Ruth M. Wright, J. A. Cohalan, A. L. Conger, Sarah E. M. Roberts, Wilson Baen, John A. McDonald, Theo. Neilson, Leslie Keyes, William J. Wilson, R. A. Bower, E. O. Millay, A. T. Vance, C. J. Gaddis, O. N. Wal-

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These have paid as indicated under the same plan: Charles R. Palmer, $11.50; E. E. Harden, $5; Delphine Magronne, $12; L. E. Scott, $5; Raymond Ludden, $4; M. B. Dunnington, $12; E. F. Dietzman, $3; Emma De Witt, $12; Marion Whittemore, $12; L. D. Martin, $5; J. H. Baughman, $12; L. C. Kling, $10; C. M. La Rue, $12; J. W. Forquer, $12; A. C. Groth, $3; J. G. Morrison, $2; J. N. Helmel, $12; F. E. and H. C. P. Moore, $12.

Total contributions from outsiders, $3,805; grand total, $36,144; invested in mortgages, $34,100; cash on hand, $2,044.

Osteopathy Fifty Years Hence

An address at the closing exercises of the Philadelphia College

Russell Duane, Esq., one of the leaders of the Philadelphia Bar, made the following most able address before the graduating class of the Philadelphia College of Ostopathy, June 5. It will give courage to every osteopathic physician who reads it:

At previous commencements of this institution the origin and history of osteopathy have frequently been the subject of discussion and review. On this occasion it is my purpose to say a few words as to the probable future of osteopathy, and of the various channels through which its influence is likely to be enforced and extended. The great Doctor Still once said, 'Osteopathy is a science fifty years ahead of the times." In the spirit of this remark let us try to forecast the future of the profession, and picture to ourselves what its statue is likely to be fifty years hence after the times have caught up with osteopathy.

1. Probably the most characteristic single medical thought of our day is the idea that "prevention" of diseases is more certain in its result, and in every way preferable to an attempted "cure." Measures of prevention have in recent years occupied a position of increasing importance, both with our public authorities and with the medical profession, and many terrible diseases like yellow-fever and smallpox have thus been eliminated or largely reduced. It is said that a custom exists in some parts of China, according to which medical men are paid by their patients for keeping them well, and that as a penalty for failure to do this, medical attendance must be furnished free whenever the patient becomes ill. By the end of the next half century, with the growth in popular intelligence, which may reasonably be expected within that time, this idea of "prevention" is likely to control the habits and practice of the entire community. With that development will naturally come about a corresponding progress in those branches of medical science and medical art, which have as their direct aim the production and maintenance of health as contrasted with those branches which are merely available to cure existing illness.

In the science of osteopathy the element of prevention is at least equally prominent with the element of cure, and hence osteopathy is certain to share in the progress of popular intelligence toward the universal use of preventive measures. Osteopathy is well adapted to cure the patient of manifold ills: but an even more important function of osteopathy is the removal of causes likely to produce ills. Osteopathy aims at catching the patient before he becomes too much of a patient. Its object is to rectify the irregularities of bony structure and tissues before the aberration becomes so great as to induce active disease. From the osteopathic standpoint the number of ill persons in a community is not to be estimated by counting up the inmates of hospitals and sanitariums or the number of those confined to bed in private dwellings. On the contrary, those denominated ill should include all persons who are conscious of a lack of strength, vitality or efficiency which can properly be attributed to any physical derangement, however slight it may be in its present existing stage.

It has been estimated that over 90 per cent. of the persons one would meet on Chestnut street at any hour in the day are in need of some physical correction such as osteopathy affords. In many cases this physical derangement is so slight that the person in question has no consciousness that anything is wrong, yet there exists in that person's organism an ever-present source of irritation and disturbance of function, which in time may readily grow to serious proportions.

At the present moment the community generally does not appreciate the need of having minor structural derangements corrected. The field of osteopathy is unfortunately curtailed through the ignorance of a large section of the public as to what it is, its past history, the scientific theory underlying it and the character of the cures which it has effected.

Fifty years hence the community will recognize the fact that osteopathy affords the most effective means known to medical science of correcting physical errors and defects having the most untoward possibilities, and occurence of the gravest evils and diseases. To-day every intelligent man recognizes the importance of having detailed scientific care given at stated intervals to such portions of his body, for example, as the eyes and the teeth, and he recognizes that such attention to be efficacious must be given promptly and with regularity. Out of this recognition have developed two of the greatest, most useful and most profitable professions, viz.: those of the oculist and the dentist. In time every man of intelligence will apply the same wise rule to the remainder of his physical structure, and even when in apparent health will seek examination and, if necessary, treatment at regular intervals from his osteopath with the same care which he now exercises as regards his oculist and his dentist. With that care will come the corresponding reward that if anything is wrong with the patient in any physical aspect it can be set straight before illness or disease supervenes.

2. There is excellent reason to believe that the growing employment of osteopathy in the prevention and cure of disease will be accompanied during the next half century by a steadily increasing application of its methods to cases of traumatism. Osteopathy is peculiarly adapted to the relief and cure of injuries occasioned by violent accidents. Scientifically analyzed all accidents involve an impact by some form of fortuitous violence upon one or more points of the physical structure. For simple bruises and lacerations nature furnishes certain rough and ready remedies, but if the impact is severe, injury is likely to ensue to the bones, ligaments, muscles, nerves or possibly the internal organs, such as requires external mechanical readjustment. For illustration, I would point to a case which came to my knowledge of a patient who sustained disturbance of several vertebral joints of the neck as the result of a violent fall from a horse. By osteoparthic means a complete cure was effected in less than half an hour after injury, which without it would probably have resulted in life-long deformity accompanied by partial paralysis. Not only is osteopathy effective in replacing members disturbed by violent accidents, but it also accomplishes the ensuing result of alleviating the equally serious symptoms of a nervous character which so often follow accidents causing some kind of displacement.

The fact that the great mass of the community habitually go about with imperfect physical structures, and in a low state of physical vitality is shown by the frequency with which evil consequences of a nervous character ensue upon the happening of very trifling accidents. The explanation is that, from an osteopathic standpoint, such a patient, although not aware of the fact, is in bad condition *before* the accident. Now, if osteopathy is promptly applied to the replacement of disturbed members and to the restoration of proper circulation and muscular and nerve action, the causes of nervous disturbance will be eliminated and a speedy cure accomplished.

3. I now approach the interesting subject of the probable relations which will exist fifty years hence between osteopathy and the various professions and industrial pursuits. In the matter of the treatment of accidents osteopathy comes into close relation with the practice of my own profession of the law. At the present time the accident cases pending in the courts of Philadelphia County consitute nearly one-half of all civil suits. This fact affords to all lawyers an exceptional opportunity to promote the welfare of their clients, as well as of the community, by advising such injured persons to undergo osteopathic examination and treatment for the purposes of curing their injuries. For many years past it has been my practice, whenever retained to represent a plaintiff in an accident case, to have my client examined by some leading osteopathic practitioner as a means of obtaining light upon the nature of his injury and the chance of its cure. Where the examination has warranted it, I have always found it possible to influence the client to submit to the subsequent osteopathic treatment which his condition required. In some cases where I have been forced to give an adverse opinion from a legal standpoint, and to tell the client that his case was hopeless, I have had the satisfaction of seeing him from a medical standpoint entirely cured or substantially relieved. While this method of curing the client before a jury has had an opportunity to assess damages is sometimes bad for the legal end of the case, and always tends to reduce the fees of counsel, it means life and health to the plaintiff and sometimes a substantial reduction in the loss which would otherwise have ensued to the defendant. I believe the time will come when every well-informed and right-thinking lawyer will consider it his duty to his client not only to render him the best possible legal service, but also to advise him as to the most effective means of relieving such physical injuries as he has sustained.

I will also indulge in the prediction that in another half century the great public service corporations will keep in their employ a staff of osteopaths whose duty it will be to administer free treatment to injured passen-

gers, employees and other claimants. Such a system to-day, if well-equipped and maintained, would mean life and health to thousands of unfortunate victims, and reduce the yearly accident bill of the railway corporations of the United States at least twenty millions of dollars.

I believe that the observed benefits of osteopathy in the treatment of accident cases will in time lead to its general adoption as an important element of industrial efficiency in the operation of large industrial plants. The ideal future of osteopathy will be realized when every employer of labor will regard it as not only his duty, but also to his interest to cause each of his employees to be examined by a competent osteopath, and all needed treatment given at the employer's expense for the purpose of putting the employee in a sound physical condition from an osteopathic standpoint. A moment's reflection will make it obvious that the body of an employee (and the same thing is true of the body of his employer) is simply a piece of machinery operating in a productive process. In more than a dozen of its aspects we can compare it, for example, with a locomotive or motor-car, although it is infinitely more complex because adopted to so many more uses. If a "part" of a locomotive or motor-car becomes broken or bent, or there is an "interference" of parts, not a moment is lost in taking it to the machine shop. The same intelligent care should be applied to the human machine. Such a system, if adopted, for example, by a manufacturer, would not in any sense be a charity. On the contrary it would mean increased profits to the employer through the larger return made by the employee, and a return made with infinitely less discomfort to himself. The cost would be a legitimate expense in the conduct of the business—as legitimate as the expenditure made for repairs or for oil in the operation of an engine. Not only would the life of the employee be prolonged and his health safeguarded and improved, but his efficiency would be permanetly enhanced, and time lost in avoidable illnesses would be eliminated. The public will some day realize that very few persons ever become ill who have been put in good osteopathic condition at a time when they were apparently well.

4. I also predict that the next half century will witness a constantly increasing association between the profession of osteopathy and public philanthropy. One of the greatest philanthropists which this country has ever produced once said in my hearing, "It is very hard to do good without doing a great deal more harm." This may be true of much of the public and private almsgiving of our time, but of the wisdom of that charity which gives health to the sick and strength to the weak, which makes the deformed whole and the crooked straight, there can be no possible manner of doubt.

I foresee a time when through the instrumentality of our great public charities osteopathic treatment will be furnished to those who need, but cannot get it as a part of scientific system to accomplish their restoration to, and maintenance in, a condition of active industry and economic self-help. There will come a time when every well-equipped hospital will have its corps of osteopathic doctors just as to-day it has its corps of medical doctors and trained nurses. There ought to be, and ultimately will be, concurrent action and harmony of feeling between the various branches of the medical profession now so radically divided. In time the medical practitioner will, as a matter of course, call in and consult the osteopath in cases needing his skill, and the osteopath will freely call in as a consultant the medical practitioner, in order to secure his professional aid in such cases as may require it. Many of our foremost physicians, like the late Dr. Musser, have already recognized the wisdom of invoking the co-operation of able osteopaths in the treatment of many of their cases.

In time osteopathy, in many classes of cases, will probably become the exclusive method of treatment recognized and enforced by leading practitioners of all schools and by medical associations. I may be mistaken, but that is my prediction. In time also I hope to see established what I believe would be the greatest charity within the power of any rich man to create, namely: "An Institute for Diagnosis." By this I mean a bureau to which any man or woman of any station in life, who was feeling ill, could go and obtain the service and advice of expert diagnosticians as to the nature of the patient's trouble, and obtain the name of the specialist, whether osteopathic or otherwise, to whom the patient could resort for relief with the best chance of obtaining a cure.

In conclusion, I would say to the members of this graduating class that the realization of the future of osteopathy which I have endeavored to portray is in the hands, primarily, of the graduates of this and other similar osteopathic colleges; and secondarily, it depends upon the faithful co-operation of those laymen like myself, who have had an opportunity to test its benefits and possibilities. I would have every graduate realize that he is charged with a personal responsibility to accomplish the results which I have outlined, and which I believe to be well within the possibility of attainment. You who have enjoyed the advantages of this institution are now called upon to administer a sacred trust. On your fidelity to duty depends the future of a great cause.

Open Parliament

THE DOCTOR WILEY CASE.

As Dr. Harvey W. Wiley has sent me a copy of the official stenographic report on the hearings before the Committee on Interstate and Foreign Commerce at which he denounced osteopathy as a fraud, it strikes me that the official journal of the osteopathic profession should publish this in order that we may judge this eminent man upon the facts instead of upon the newspaper report.

Here is the official report:

Mr. Hamilton. There is a school, as I understand, which denies, in part at least, the need of resorting to medicines, but claims that the disturbed condition, the disease—say, indigestion or, say, a stagnant liver—may be produced by a disarrangement of the vertebrae, thereby exercising a pressure upon nerves, and thereby preventing the organ from operating as it naturally should. That is a school also, is it not?

Dr. Wiley. Well, I do not know what you mean by a school. I know there are a great many torpid livers that have been produced by dislocated vertebrae, but they never reattained their activity.

Mr. Hamilton. It is claimed, however, that by getting the vertebrae readjusted and nerves restored, the liver will readjust itself, by those who belong to this school.

Dr. Wiley. My idea of a broken vertebra is death or paralysis.

Mr. Hamilton. But this is not a case of broken vertebrae.

Mr. Esch. You are talking to the Doctor about readjustments?

Mr. Hamilton. Yes; and restoration of conditions.

Dr. Wiley. Do you mean osteopathy?

Mr. Hamilton. I mean osteopathy.

Dr. Wiley. I do not know anything about osteopathy; have not any knowledge of it. I do not believe it is a school; I do not believe it has any scientific basis; I believe it is a pure fraud if it promises to cure or prevent typhoid fever, malaria, yellow fever, tuberculosis, rabies, and all other infectious and contagious disease by spinal readjustments. It is not like homeopathy, that has a real school of medicine; they are real physicians; they are educated in the principles that underlie all medical science, and while I do not agree at all with their creed, I do believe they are often successful physicians, because they do not stick to their creed, just as I said here a while ago. But that a vertebra is displaced is absurd; you would not have to go to a physician to find it out.

Mr. Hamilton. It does not mean displacement, as I understand it. Of course, you would understand it better than I. The vertebrae might have gotten a little out of their natural adjustment and thereby have interfered with the radiating nerves which control certain functions.

Dr. Wiley. If you will permit me to suggest, it is the brain of the prescribing physician that is out of adjustment and not the vertebra of the patient.

In his letter to me, Dr. Wiley says: "The remark I made to which you refer was due to a question asked me by a member of the committee of Congress, before which I was speaking. He asked me what I thought of that theory of disease which traces every disease to a pressure produced on the spinal cord by a displacement of vertebrae. I responded that I regarded such a theory as fraudulent, and I further said that if that was osteopathy, then osteopathy is a fraud. (See page 227—Hearings.)"

In reply I have written the following to Dr. Wiley:

Thank you for sending me the report of the Congressional hearing. It does not seem any more in conflict with the newspaper report than it does with your own letter to me. In the latter you say you were asked your opinion of that theory "which traces every disease to a pressure produced on the spinal cord by a displacement of vertebrae." A careful study of your entire testimony shows that you were not asked any such question. "Spinal cord" was not mentioned. It is just such methods as yours, by putting into other mouths words never uttered, that members of the old school seek to cast public discredit upon the new school of practice.

In the next sentence of your letter of June eleventh, you say "I responded that I regarded such a theory as fraudulent." I regret my inability to understand your English. Dictionary authorities inform us that a "theory" cannot be fraudulent.

Medical literature teems with the proofs of osteopathic theories. I am enclosing a few of them. It is certainly unfair upon your part (I should not want to be discourteous and use such a word as "fraudulent" as glibly as you do) to set up a straw man and then bravely knock it down, when you base our claims upon vertebral pressure on the spinal cord without those words even being mentioned in the question put to you. It is rather significant that a layman knew better than to ask

such a stupid and unscientific question and that an eminent graduate in medicine deliberately stooped to such a trick.

The opinion of the public upon your denunciation of foods and drugs as "fraudulent" may become somewhat altered when it is known that you brand as "fraudulent" a school of practice, of which you admit over your signature you are ignorant.

You write me that you "do not believe in any system of medicine which is founded upon any theory except these, namely, to use every known means to ascertain the true cause of disease, and then every known remedy to combat it." Osteopathy is a complete system of practice and includes the use of every known means of diagnosis and every known remedy which truly combats disease without killing or injuring the patient.

You say you believe osteopathy is a system of massage. I should think a man in your position would refrain from giving as his belief a statement contrary to the encyclopediae and the statute laws of various states. In this state the law says specifically that the words "osteopathy" and "medicine" are synonymous. What, then, becomes of your statement that "osteopathy is a system of massage?"

You say that osteopaths "deify a theory." If they deify their theory more than you deify the infallibility of the American Medical Association, they will be quite religious. Do not forget that the discoverer of the circulation of the blood was ostracised by his profession for differing from the majority.

One of the most earnestly debated subjects at the American Medical Association convention the other day was the question of the absolute necessity of heading off the tremendous growth of osteopathy by including it in the medical schools.

May I ask, in conclusion, Doctor, that you either subject osteopathy to a genuine investigation or that you retract your use of the word fraud"? It is not unmanly to admit that the word was hastily used and that its choice is regretted. Then we would be able to respect your opinion upon foods and drugs hereafter.

I have written to the publishers of Good Housekeeping Magazine as follows:

I am enclosing copy of letter which I am sending by this mail to Dr. Wiley, and wish to advise you that the correspondence is to be published in the journals of the osteopathic profession for the purpose of acquainting the six thousand practitioners and their million followers with the fact that your magazine is making no effort whatever to disabuse them of the idea that your publication stands for a man who publicly denounces as a fraud their school of practice, and then admits that he knows nothing about it."

I do not believe in letting this matter drop. I suggest that every member of the association write to Good Housekeeping Magazine, Springfield, Massachusetts, in a similar vein.

R. KENDRICK SMITH, D. O.

BOSTON, MASS.

RESPONSIBILITY RESTING ON OSTEOPATHIC PHYSICIANS

Medical doctors are busy in all fields. We find that they have entered the public schools, and are in touch with the Men and Religion Forward Movement, are busy with Legislature matters, enacting laws which compel the various counties in different States to erect suitable sanitariums for the rational treatment for T. B. as they claim. Those very doctors claim to be public benefactors, and for practicing on these various clinics (because they are nothing else) they receive salary for same.

This is an ethical propaganda instituted for their own gain, and to keep their names before the public. Many of the doctors in connection with public schools, etc., make many mistakes as they do not spend sufficient time to make the necessary examination, and therefore overlook important details entirely. The teachers sometimes have to call the attention to blindness, in one eye, or to adenoids, or some condition, where the doctor has given the O. K. on the list. When they make those gross mistakes, they say, I will look the child over again.

Commercialism has entered the field of medicine, and it is the day of competition. We have not only to contend with M. D.'s, but with corporations, etc. (employers of labor). The following instance will no doubt put some light on the subject:

Mr. H. called at office for treatment; occupation lineman, New York Telephone Company. History, fall from telegraph pole, distance 25 feet. Called on family physician after accident, and continued with him for some time, and did not obtain desired relief. Result, call at office, as stated. After negotiations for some time, the company declared osteopaths are not physicians, and are not inclined to meet the necessary expense incurred by the patient. The patient declared he would continue the treatment, as he believed it was the only treatment for his condition.

After this incident the thought occurred to me that great decisions are before us in the future. Are we benefactors, are we honest, when we know that patients may have lesions before accidents in the same part which becomes the seat of trouble after accident? Knowing this, we ought to educate these corporations, etc. We are the lesion specialists,

and the only school that can diagnose these conditions. Our training makes us the best fitted. How much do M. D.'s know about examining an accident case? The only lesion which appeals to him is a fracture or complete dislocation.

I believe we might formulate a statement which would explain to such companies as railways, accident insurance companies, steamship companies, which are liable in case of accident, the necessity of their employees being examined by osteopaths as a safeguard for themselves, having a certificate from all their workmen. The public taking examinations would be on the safe side, as it would be positive proof, and would be a kind of insurance where there could be no dispute as to the lesions being there previously.

Corporations are always safe-guarding themselves, and it is not unreasonable to suppose if the matter is placed before them in the proper light, they will try to have a measure put on the legislative Statute Books covering the same.

If such a thing took place every person would require it to be examined, or the company would not be liable to the same extent in law. If for instance a person who had received annoying calls for treatment some time after an accident, and complains of trouble in certain parts of the spine, and a lesion were found to have existed in this part, which had not troubled previous to accident, but the jar from accident was sufficient to cause marked disturbance, the question of the effect of the accident is brought up. The same might have occurred a year or so after, without any accident. Can we state positively that lesion causing disturbance present was not there previous to accident? If this matter received the attention it should have from the profession, it will no doubt advertise osteopathy and give it a place where it has a right, as we are responsible for discovery of the osseous lesion.

THOMAS MCSHERRY, D. O.
LONG BRANCH, N. J.

OPPOSES CIRCUMCISION

I have just read the article of Dr. Furry in the April JOURNAL in regard to "Adhered Prepuce." I may be mistaken, but I cannot help thinking the adhered prepuce on the male, is intended to serve the same purpose as "hymen" on the female, as a proof of chastity. There is no reason to my mind why God or Nature should put a check or proof of virtue on woman any more than on man. With an adhered prepuce, man is put on an equal footing with woman.

If left alone until coition, the same act that destroys the hymun, destroys or removes the adhesions. If this is not so why does nature put the adhesion there? I have known cases of boys, where the adhesions were left until they were old enough to play with other boys, seven to ten years old, and because they could not pull the prepuce back, like the other boys, and the other boys laughed at them, they pulled the adhesions loose themselves. With the prepuce adhered, there is no space or cavity between it and the glans, no room for smegma or other filth to gather, besides all smegma comes from the meatus, and only gathers under the prepuce, because it has been pulled loose, and lets the filth work back under it.

These boys never had any trouble about being clean, or smegma gathering, until after the adhesions were destroyed.

I cannot believe it any more necessary to destroy the adhesions of the prepuce on a male child than to destroy the hymen on a female child. C. R. PALMER, D. O.,
PASADENA, CAL.

State and Local Societies

GEORGIA

In addition to the program given at the recent meeting of the Georgia Osteopathic Association, as published in the last issue, the following officers were elected. President, W. H. Bowdoin, Atlanta; vice-president, E. E. Bragg, Atlanta; secretary-treasurer, James Gorin, Savannah.

OHIO

The Miami Valley Society held its regular session June 6. The out-of-town members were guests of the Dayton practitioners at a 6 o'clock dinner. This is the last meeting of the society until September.

The president, W. B. Linville, of Middletown, reviewed the work accomplished during the six months the society has been organized, after which the following officers were elected for the ensuing year: President, J. F. Minear, Springfield; vice-president, H. H. Gravett, Piqua; secretary-treasurer, W. A. Gravett, Dayton.

OREGON

The eleventh annual meeting of the Oregon Association was held in Portland June 10 and 11. The program opened with the presidential address by B. P. Shepherd, followed by a Symposium in Diagnosis with Demonstrations; "Physical Examination," E. B. Haslop, Oregon; "Reflexes," L. H. Howland, Portland;

"Posture and Gait," A. B. Ford, Seattle; "Specific Osteopathic Examination," E. G. Houseman, Nampa, Idaho; "Laboratory Diagnosis, Chemical and Microscopic," A. P. Howells, Corvallis; "Bacteriological and Pathological Observations," J. L. Walker, Sunnyside, Wash.; "Points of Diagnosis and Sacroilliac Lesions," W. L. Nicholls, Enterprise; "Osteopathic Mechanics," J. A. Van Brakle, Oregon City.

The following officers were elected for the ensuing year: President, L. H. Howland, Portland; vice-presidents, E. T. Parker, Portland, and R. C. Hicks, Astoria; secretary, Lillian Baker; treasurer, W. G. Keller; editor, H. C. P. Moore, all of Portland.

PENNSYLVANIA

The thirteenth annual convention of the Pennsylvania Osteopathic Association was held at the Fort Pitt Hotel, Pittsburgh, June 21 and 22. After an address of welcome and the President's address, George M. Laughlin conducted a clinic. After another clinic, with demonstrations by F. A. Turfler, of Renssalaer, Ind., there was a most interesting and helpful symposium on obstipation, as arranged by Julia E. Foster, of Butler: Anatomy, Laura B. Dinsmoor, Sewickley; physiology, Mae Hawk Van Doren; pathology, Roland C. Coryell, Brookville; physical diagnosis, Sarah C. Oneland, Union City, and W. L. Grubb; treatment, Alice [illegible] Williamsport; Robert H. Miller, Washington, and Carroll B. Morrow, Butler. Banquet: Toastmaster, H. M. Vastine; "Our Role," Clarence V. Kerr, Cleveland, Ohio; "The Quiet Observer," Erasmus Wilson, Pittsburg; "Bending the Twigs to Incline Osteopathically as Trees," Sarah C. Oneland, Union City; "The Outlook," O. J. Snyder, Philadelphia; "Academic Revision," Earle S. Willard, Philadelphia; "Osteopathy Infringed Upon," Harry M. Goehring, Pittsburgh; "The Physician as a Patient," Emma Purnell, Lancaster; "Research Plans and Possibilities," William Rohacek, Greensburg.

At the Saturday morning session W. L. Grubb, of Pittsburgh, presented his views on "Diagnosis by the Iris," and W. S. Nicholl, of Philadelphia, demonstrated on clinical subjects, "Manipulative Treatment of Common Diseases of the Eye." Dr. G. M. Laughlin occupied an hour at the session with further demonstrations of cases illustrative of osteopathic orthopedics, and also taking up nervous diseases. M. E. Clark, of Indianapolis, Ind., spoke at this session on "Observations in Cases of Indigestion," with clinic cases of anemia, malassimilation, gastroptosis, etc.

The afternoon session was given over to a discussion and demonstration by Ralph H. Williams, of Rochester, N. Y., of "Broken Arches and Kindred Affections," and the election of officers, which resulted as follows: President, E. M. Downing, York; vice-president, Irving Whalley, Philadelphia; secretary, Julian C. Foster, Butler; treasurer E. N. Hansen, Pittsburgh; executive council, officers of the association and S. F. Warren, of Philadelphia; V. A. Hook, Wilkes-barre, and John Robinson, Erie. O. J. Snyder was re-elected as a member of the State Osteopathic Board, and previous to his re-election was tendered a vote of thanks by the association for his faithful and efficient work during the past year while serving as a member of the board.

SOUTH CAROLINA

The South Carolina Association met in Charleston June 13. The attendance was good and much interest was manifested and the presence of several new members was encouraging.

Officers were elected as follow: President, W. E. Scott, Greensville; vice-president, B. F. Landrum, Florence; secretary-treasurer, Mary Lyles Sims, Columbia.

VIRGINIA

The midsummer meeting of the Virginia Association met in Norfolk June 15. The visitors were entertained by the local profession. J. Meek Wolfe, of Lynchburg, the president presided, and M. L. Richardson, of Norfolk, read a treatise on "The Osteopathic Treatment." Other papers were read by George E. Fout and W. D. Bowen, of Richmond, and H. S. Beckler, of Staunton.

The association took note of the death of R. W. Martin, M. D., late president of the State Board of Medical Examiners and State Board of Health, and adopted appropriate resolutions. The midwinter meeting will be held in Richmond.

Short News Notes

HALL USHERS

In order that the crowds may be seated speedily and with as little confusion as possible, I have selected ushers for each day as printed below.

In this connection let me say that our aim will be to secure the best of order at this meeting. To that end it is requested that all assemble promptly, for the President announces that the sessions will start on time. The program is full and this is necessary.

In order that the speakers may have the best

of attention and in order that all may hear, we will admit none during the regular addresses and demonstrations. Please take due notice of this and be on time at the opening of the session.

Monday:

Dr. Frederick J. Harlan, Flint, Mich., chairman; Dr. J. E. Downing, Bay City, Mich.; Dr. Anna Belle Hicks, Jackson, Mich.; Dr. J. A. Garlinghouse.

Tuesday:

Dr. G. H. Snow, Kalamazoo, Mich., chairman; Dr. J. E. Downing, Bay City, Mich.; Dr. Betty Hicks, Battle Creek, Mich.; Dr. J. C. Garrett, Ypsilanti, Mich.

Wednesday:

Dr. C. E. Williams, Flint, Mich., chairman; Dr. E. A. Seeley, Lansing, Mich.; Dr. J. E. Downing, Bay City, Mich.; Dr. Mary Trueblood, Traverse City, Mich.

Thursday:

Dr. J. E. Downing, Bay City, Mich., chairman; Dr. E. A. Seeley, Lansing, Mich.; Dr. S. R. Landes, Grand Rapids, Mich.; Dr. J. E. Shorey, Marquette, Mich.

Friday:

Dr. J. C. Garrett, Ypsilanti, Mich., chairman; Dr. Laura Nicholson, Ann Arbor, Mich.; Dr. Della Renshaw, Detroit, Mich.; Dr. Ancil B. Hobson, Detroit, Mich.

These committees, having in charge the halls and exhibits on the different convention days, will greet the many osteopaths attending the convention and will be ready to serve every want of the individual concerning the halls and exhibits.

CHAS. A. BENNETT, D. O.,
Chairman, Halls and Exhibits.

DELTA OMEGA REUNION AT DETROIT.

The Delta Omega Sorority is looking forward to a most enthusiastic and profitable time at this, its first national meeting. Dr. Rebecca Mayers has offered her offices for headquarters for the sorority during the convention. On Tuesday, at 11:30 a. m., a business meeting will be held at these headquarters.

On Wednesday, at 11 a. m., a short meeting will be held to take up unfinished business, after which at 12 o'clock the sorority will entertain at luncheon at the Detroit Boat Club. Price per plate, $1.00. Please reserve plate with Eleanor S. Harvey, Stevens Building, Detroit.

CARRIE C. HARVISON, *Chairman.*
REBECCA B. MAYERS,
ELEANOR S. HARVEY,
Entertainment Committee.

BY BOAT TO DETROIT.

Leslie S. Keyes writes that the Minnesota profession will make the trip on one of the Coast Line steamers over Lake Huron to Detroit. This makes a splendid outing, and it is probable that very many from the East will use the Detroit and Cleveland boats over Lake Erie from Buffalo to Detroit.

PROSECUTIONS AGAINST IRREGULAR.

The Rochester (N. Y.) Osteopathic Society has caused the arrest of four masseurs and chiropractors practising in that city, charging them with violating the Medical Practice Act. The press dispatches state that the chiropractors will be defended by an attorney of Cleveland, Ohio, who is employed by the National Association of Chiropractors.

In the Lynchburg (Va.) corporation court recently a chiropractor was charged with unlawfully practising medicine without having first obtained a license from the Medical Board of the State. He had already been fined $50 by the police court, from which decision appeal had been taken to the city court. A verdict of guilty was rendered with the intention of taking the case to the Supreme Court of the State to test whether the laws exclud d chiropractic treatment. The defendant was provided with several well-known attorneys.

PRESERVING AND TRANSPLANTING TISSUE.

The announcement comes from Paris that Dr. Alexis Carrel, the French surgeon attached to the Rockefeller Institute of New York, has been able to perfect his technique so that organs and parts of organs of animals may be preserved by almost indefinite time and finally transplanted and made to grow at least for a limited time in the same organ of other animals.

For instance, it is claimed that a section of the heart of a chicken may be put into blood plasma and after remaining several days, if taken out and washed in a new antiseptic he has discovered, at intervals of two or three days and again placed in blood plasma, it will continue to be alive for several weeks. He further claims that he has been able to keep these sections pulsating for over 100 days. One section, it is claimed, which at the beginning pulsated 120 times per minute, after ten or twelve weeks, still maintained ninety-two beats per minute.

GRADUATE. AT PACIFIC COLLEGE.

The Friday Morning Club House of Los Angeles was the scene of the graduation exercises of the Philadelphia College of Osteopathy, June 18, when, clad in cap and gown, eighteen graduates were given their diplomas.

Dr. C. A. Whiting, chairman of the faculty, presented the diplomas. C. H. Phinney delivered the graduation address, and J. O. Hunt conferred the degrees.

DEMOCRATIC PLATFORM AND HEALTH DEPARTMENT

One so-called plank in the Democratic National Platform reads as follows. It may mean something or it may not.

"We reaffirm our previous declarations advocating the union and strengthening of the various governmental agencies relating to pure foods, quarantine, vital statistics and human health. Thus united and administered without partiality to or discrimination against any school of medicine or system of healing, they would constitute a single health service, not subordinated to any commercial or financial interests, but devoted exclusively to the conservation of human life and efficiency. Moreover, this health service should co-operate with the health agencies of our various States and cities, without reference with their prerogatives or with the freedom of individuals to employ such medical or hygienic aid as they may seet fit."

CANDIDATE WILEY TO NOMINEE WILSON

According to the newspapers, among the first congratulations Governor Wilson of New Jersey received upon his nomination to the Presidency, was the following from Dr. Wiley, said to be the avowed candidate for Secretary of Health in the Department when formed:

"Heartiest congratulation on your deserved nomination. We shall have a real pure food President."

A SPLENDID AUTOMOBILE OPPORTUNITY

The JOURNAL takes pleasure in presenting in this issue the advertisement of the Pullman Motor Car. Co., of York, Pa. This car has been used by many osteopathic yhpsicians who have given some of the strongest endorsements that could be given to any motor car, hence we have solicited and received their advertisement.

The officers and owners of the company are best possible friends of osteopathy, and they are hence making a special effort to introduce their car to our profession. In view of this, every osteopath, who is interested in a car, sould look into the Pullman car, for they may be assured of not only finding a car that will greatly interest them, but in receiving treatment which cannot be found where no special interest in the profession exists.

The Internal Secretion and Principles of Medicine

Such profound variations does this work introduce into conception of the body and of therapeutics that its reception must necessarily be slow. But the edition previous to this was sold twice as fast as its predecessor, and this present edition is again doubling the speed.

The broadening and deepening recognition of the great importance of the Internal Secretions, and the enthusiam that begins to show itself whenever the name of Sajous is mentioned, are very gratifying to those who have followed the course of the author of these two volumes.

It will be interesting to the osteopathic profession to know that Dr. Sajous' interest in osteopathy has become great enough to induce him to consent to edit some of the chapters of Dr. Earl S. Willard's forthcoming book on osteopathy.

The importance of this work to the science of osteopathy is as great as its importance to drug medicine, or greater. The facility with which these organs seem to be reached and influenced by osteopathic means renders a knowledge of them of immense value. The work is also prophetic of a truly scientific medicine, whose relation to osteopathy may be that of emergency measures, supplementing its fundamental work in certain cases, notably in scientific feeding, which subject is now being developed in relation with these glands by Dr. Firth.

Of practical importance is the great frequency with which syndromes from deficient or excessive action of these ductless glands are met in practice. The complete picture is of course rather rare, but the milder type, in my experience, is very frequent. In fact, the disturbance of chemical balance may be thought to be a factor in practically every disease. The chemical mechanism and the mechanical side of the body are as Siamese twins.

The syndrome from the adrenal bodies is the one most frequently met. When their action is *exaggerated* we have:

Increased blood pressure with contraction of arteries and veins, especially the splanchnics; slow and heavy heart beat;

From which results dilatation of the capilaries, with general tendency to hemorrhage, as nose bleed, haematuria, flushing of the skin, etc.;

From this high blood pressure, functional activity is high, metabolism is in excess; from which we get thirst, hunger, rigidity of muscles;

From the irritation of the nerves comes twitchings, tremblings, formication and convulsions. From the destruction of red cells by excess of adrenalin comes pigmentation of the skin.

From strain of nerves of the adrenal body comes pain in the nerves of the 11th dorsal.

From *lessened* activity of the adrenal bodies comes lowered blood pressure, subnormal temperature, feeble and rapid heart. The blood gathers in the splanchnic vessels, which may become so dilated that they may be the seat of severe pain.

From lowered pressure comes cold extremi-

ties, syncope convulsions (from depletion of blood and accumulation of waste products in the brain), loss of motor power.

Since the adrenalin goes to form the haemoglobin, in the failure thereof will occur shortness of breath, bronzing of skin.

The loss of muscular power and sensation, especially in the legs, arises partly from lowered blood pressure, but mostly from the strain upon the nervous mechanism of the adrenal bodies situated in the 11th dorsal segment, together with the stretching of the splanchnic vessels, innervated from the same segment.

The syndrome from the thyroid gland is less frequently seen, and seems to arise mostly in connection with pelvic disturbances. First occurs its stimulating effect on the adrenals, and from these two we have exophthalmic goitre with its syndrome. Phosphoric acid metabolism and secretions are in excess; and from the effect of phosphoric action on the nervous system we have restlessness, delusions of sight and hearing, pseudo-hysteria and even mania.

Tremors, especially of the upper extremities, refer to the upper dorsal centres, as does the strident nature of the voice. Choreic movements, local cramps and even epilepsy may arise.

Excessive metabolism consumes first all the fats and then attacks the nitrogenous monocules. Burning blushes of the skin, sweating, demand for drink. Tacycardia, arise from this.

After the exhaustion of the thyroid and adrenal secretion, the asthenic stage or myxoedema arises.

In hypo activity of the thyroid gland arise twitchings, spasms, convulsions.

Occipital and inter scapular pain, with supra clavicular fat pads, point to the upper dorsal and cervical centres.

The effect on metabolism is seen in loss of hair and teeth, lassitude, stubborn constipation, mental torpor.

In children we have the slow physical and mental development, irregular skeletal development, lymphatic enlargement, occasional enuresis.

Diseases of the thyroid gland affects the para-thyroid, so that it is not easy to differentiate the two. The para-thyroid on the whole seem responsible for calcium metabolism. The syndrome is rare except in children.

From hypo activity of the para-thyroids arise:

Spasms and convulsions, fibrillary trémors, muscular rigidity, choric movements;

Reduced red corpuscle, dysnoea, deficient oxygantation, cyanosis, increased polyneuclear leucocytes;

From the effect on the alimentary tract arise:

Ptylasm, bad breath, anorexia, spasms of masseters, thirst, bilious and mucous vomiting, foetid bloody diarrhea.

From the effect on metabolism arise:

Weakness, somnolence, terror stricken agitated mental states, pruritus, scanty urine, albumin glucose and indican in the urine; calcium and potassium in excess, phosphates diminished.

The definite pictures of these syndromes are rare, except the first, but the less definite pictures are of great frequence.

The pituitary body as the organ presiding over these glands is perhaps involved in all cases where they are involved, and in many in which their involvement is not definite. The local symptoms of infections, auto infections, dietary and thermic strains and mental strains, show themselves in almost every case, first in the nerves related to the pituitary body. The osteopathic centres for the pituitary body are found beneath the bridge of the nose, the posterior mastoid nerve and the 3rd cervical segment, but its nerve overflow affects probably the cerebral centres before it affects these spinal centres.

The 5th edition of this work reads very much more easily than the preceding work; to those scientifically interested, it reads like a novel. As the ideas therein percolate through the professional mind and press, and their acceptance broadens, the reading of this book becomes easier and easier. There is still, we think, the need for a shorter resumê of the subject, but on the whole, probably the proof had best not be separated from the ideas as presented, lest it be too easy for the pride of skepticism to find grounds for complaint.

It would, of course, be easy to pick flaws in a work of this size; it would also be captious to do so. The work is of the greatest possible merit, and we wish it every possible success.

E. E. TUCKER, D. O.

NEW YORK CITY.

F. E. MOORE AGAIN HONORED.

After serving five years as osteopathic member of the State Board of Medical Examiners of Oregon Dr. F. E. Moore, of Portland, has received notice that Governor West had honored him with re-appointment to the office. Dr. Moore received his first appointment from Governor Chamberlain. He is now the senior member of the board.

Dr. Moore came to Portland and established offices the first of the year. During the year preceding he was abroad studying and visiting in the hospitals and clinics of Europe. He came to Oregon twelve years ago and located in La Grande.—*Portland Oregonian.*

Married—Dr. Edwin L. Schumacher and Miss Anna Marie Rice, of Kirksville, at the home of the bride, June 20.

TINKERING WITH GOD'S HANDIWORK

Those people who want government to mind everybody's business for him ought at least to accept the consequences of their doctrine. They say government does more for pigs than for people, more for horses and cattle than the human nursery. It does. It makes the farmer slaughter diseased pigs and horses and cattle, and cut down and burn up orchard trees afflicted with blight. If it did as much for humans it would prescribe chloroform for some millions of chronically sick Americans, and administer a lethal dose of laughing-gas to paternalists themselves.

Every human being is so big a problem that he alone can solve it. His own father cannot eat for him or drink for him, or marry for him, cannot suffer in his stead the pangs of either birth or dissolution. Certainly the government could not attend to the job even so well as the father. Both the purposes of providence and the necessities of society ordain that man shall be a free agent, his freedom limited only by his neighbor's. Himself must choose between good and evil. The way to make him good for nothing is to rear him as hot-house plants or fat cattle are reared. The sole business of government is to see that nobody else interferes either to make or mar. Its vainest task is to tackle the job itself.—Editorial from *New York Evening World*.

OSTEOPATHY FIFTY YEARS HENCE.

The able address printed in this issue of the JOURNAL under the above caption may be had in neatly bound reprints, single column, convenient size for mailing. 5 cents single copy; fifty copies $1.00. This address is from one of the leaders of the American bar and will give to any layman who reads it a broader conception of Osteopathy. It should be widely distributed.

IDAHO APPOINTMENT

Governor Hawley, of Idaho, has appointed Charles W. Kingsbury, of Boice, a member of the Osteopathic Examining Board to serve for a period of five years.

VETOED IN NEW MEXICO.

Word has been received that the recent composite board bill passed in New Mexico was vetoed by the Governor on account of a provision affecting the practice of Christian Science. This leaves the practice just as it was before the present session of the Legislature met.

CONNECTICUT TO ORGANIZE.

A meeting has been called by C. L. Kingsbury, L. A. Griffis, Roger Squire and W. H. Andrus of the osteopathic physicians of Connecticut at the Allyn House, Hartford, on July 3 at 4 p. m. for the purpose of organizing a State association.

PERSONALS.

Dr. Clara T. Gerrish, of Minneapolis, accompanied by her daughter, has been visiting in Portland and Seattle and will tour the Yellowstone Park, en route to Detroit.

Roberta Wimer Ford was recently called to Iowa by the serious illness of her father. She visited professional friends in Kirksville and Des Moines and other places before returning to her home in Seattle.

A. H. Davis, of Niagara Falls N. Y., recently underwent an operation for a condition which has been causing him considerable trouble and suffering for a number of years. George T. Cook, of Buffalo, and E. R. Larter, of Niagara Falls, have been taking care of his patients. He expects to resume practice about July 1.

Drs. F. H. Morse, Wenatchee; J. L. Sunnyside, A. B. Horwick, North Yakima; William Snell and W. T. Thomas, Tacoma; C. T. Smith, Aberdeena, and Aura Brown Ford, of Seattle, were among the Washington delegates to the recent Oregon State meeting at Portland.

Drs. George W. and C. C. Riley, of New York, sailed June 29 for Panama, where they will have exceptional opportunities of seeing the big canal preparations, as Mrs. Riley's brother-in-law is a surgeon in the United States service stationed there. Upon their return they expect to visit one of the New England watering places before leaving for Detroit.

L. W. Walker, of Glasgow, Scotland, is now in the states for a few months' rest, and is making headquarters at East Pittston, Mass. making headquarters at East Pittston, Maine.

For Sale—Albright Table, in good condition. $50 model; price, $25; freight prepaid. Apply D. O., care of JOURNAL, Orange, N. J.

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FECHTIG HOUSE AND THE REST TREATMENT

Dr. Fechtig announces the re-opening of his House at Lakewood, N. J., on September 3rd. He will make an especially low rate for that month and wishes those who may wish to take the milk and rest treatment to correspond with him in regard to special arrangements and exceptionally low terms.

CURES PNEUMONIA INSTANTLY

The Pacific coast papers in particular are following the experiments of one Dr. Schafer, of Bakersville, Cal., in inoculation of various vaccines prepared by him for such diseases as pneumonia, tuberculosis, typhoid fever, rheumatism, blood poisoning, etc. The papers state that many of these diseases, including pneumonia, are cured within a single day. As yet we have not noticed reviews of this in any of the medical journals.

APPLICATIONS FOR MEMBERSHIP

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Nehall, Wm. B. (Col), Y. M. C. A., Denver.
Powell, Richard B. (A), 324 Empire Bldg., Denver.

Connecticut

Fleming, Evalena C. (Ph), Chaplin.

Massachusetts

Nelson, Frank C. (Ph), Plymouth.

Missouri

Williams, Robert H. (A), Kansas City.

New Mexico

Parsons, C. L. (SC), Roswell.

New Jersey

Burke, Raymond J. (Ph), Atlantic City.
Haigis, E. S. (Ph), Asbury Park.
Lippencott, Lydia E. (Ph), Camden.
Miller, Frank (Ph), Camden.

New York

Anderson, May R. (Ph), 318 43rd St., Brooklyn.
Miller, Fred W. (At), Oneida.
Carter, H. V. (Ph), Shelter Island Heights.

Oregon

Giles, Mary E. (P), Portland.
White, But. H. (A), Salem.

Pennsylvania

Balbirine, C. D. B. (Ph), Philadelphia.
Costello, Blanche (Ph), Philadelphia.
Drew, Ira W. (Ph), Philadelphia.
Gehr, Cora Bundy (Ph), Linesville.
Kraiker, Fredk. Wm. (Ph), Philadelphia.
Slaugh, J. Harry (Ph), Philadelphia.
Thornley, Harry Earle (Ph), Philadelphia.
Tinges, George H. (Ph), Philadelphia.

South Carolina

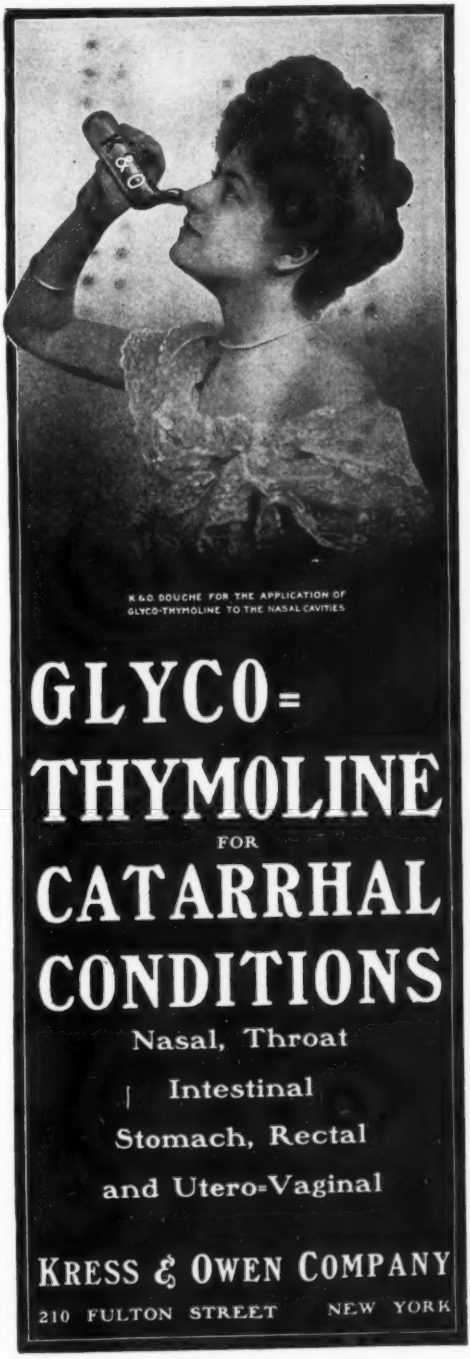
Stelle, Truman Y., Greenwood.

West Virginia

Ely, Anna L. (A), Parkersburg.
Ely, W. E. (A), Parkersburg.

CHANGES OF ADDRESS

Barber, Isabel O., from Paw Paw, Michigan, to First Nat. Bk. Bldg., Allegan, Mich.
Beard, Martha D., from Augusta, Ky., to 916 Virginia St., Hopkinsville, Ky.
Clark, Clayton N., from Kirksville, Mo., to 170 Huntington Ave., Buffalo, N. Y.
Clark, Fred W., from Kirkesville, Mo., to Marysville, Kansas.
Fergusson, E. Bertella, from Oakland, Calif., to 2503 Channing Way, Berkeley, Calif.
Gants, S. L., from Kirkesville, Mo., to 236 Bruce St., Lawrence, Mass.
Inwood, Garfield, from Chicago, Ill., to Vermontville, Mich.
Johnson, Oscar E., from Kirksville, Mo., to Princeton, Mo.
Kerrigan, L. M., from Kirkesville, Mo., to 1011 Market St., Beatrice, Nebr.
McMains, H. A. has succeeded H. Alfred Leonard in practice at Union Trust Bldg., Baltimore, Md.
Malone, J. A., from Temple Bldg., Houston, Tex., to Union Nat. Bk. Bldg., Houston, Tex.
Scott, W. E., from 325 Main St., Greenville, S. C., to 214 S. Main St., Greenville, S. C.
Stryker, Wm., from Washington, Ia., to Newton, Ia.
Williams, S. B., from Kirkesville, Mo., to Salisbury, Mo.



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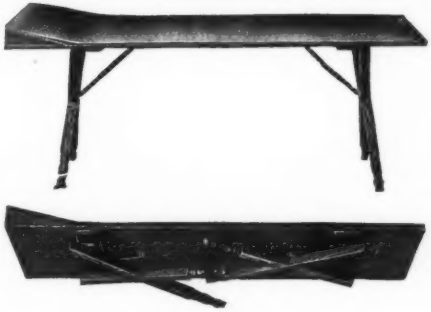

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Plan 1 provides for the departure from New York at 6 P. M., Saturday July 27th, Lehigh Valley. Train No. 3 arriving Niagara Falls, Sunday morning. Spend the day at the Falls, return to Buffalo 5.25, connect with the steamer of the Detroit and Buffalo line leaving Buffalo 6 P. M., night trip over Lake Erie, reaching Detroit Monday morning.

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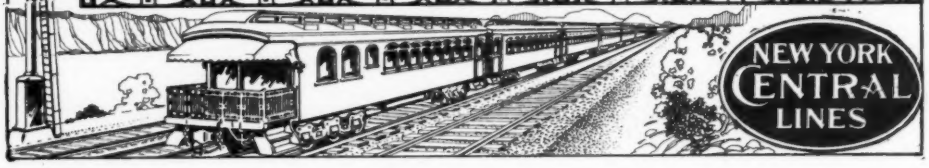

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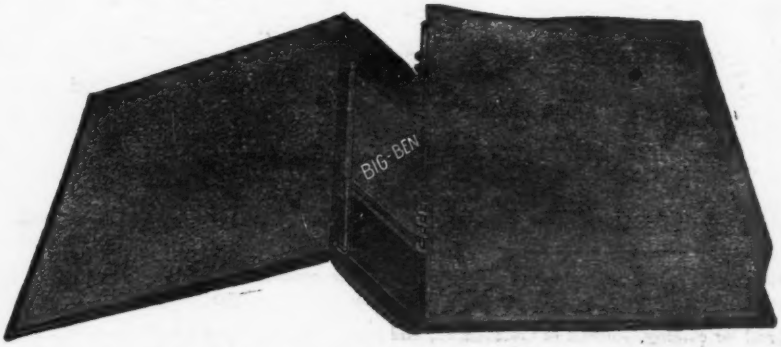

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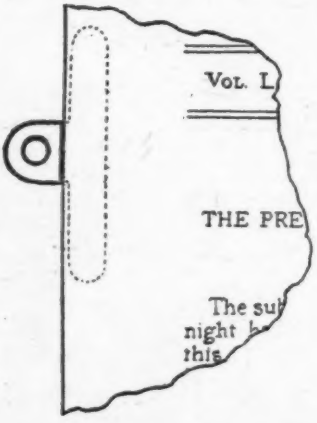

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